VHS-C Camcorder

VKR6843/20
68VKR43/40

Service
Service
Service

Service Manual

Camcorderset VHS-C PAL

VKR6843/20

– VKR6840/00	Camcorder
– SBC5413/00	AC-Adapter
– 22AV5166/20	Grip type battery
– 22AV5167/00	Carrying strap
– SBC5509/00	Outputcable AV-Scart

68VKR43/40

– 68VKR43/20	Camcorder
– SBC5413/20	AC-Adapter
– 22AV5166/20	Grip type battery
– 22AV5167/20	Carrying strap
– SBC5509/20	Outputcable AV-Scart

Contents

- Table of contents per page
- Specifications
- Technical informations
- Adjustment procedures
- Block diagrams
- Schematic diagrams
- Exploded views
- Mechanical partslist
- Electrical partslist

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Documentation Technique Service Dokumentation Documentazione di Servizio Huolte-Ohje Manual de Servicio Manual de Servicio

Subject to modification
4822 726 14791
Printed in The Netherlands
© Copyright reserved

Published by
Consumer Electronics

CS 27 497

SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: Battery; DC 9,6V Consumption: 8,7W (Batt. operation/Camera search mode)
VIDEO RECORDING SYSTEM	4 rotary videoheads Helical scanning system PAL
AUDIO RECORDING SYSTEM	Linear Audio Recording (mono)
TAPE FORMAT	VHS-C Cassette tape (Tape width 12.7mm)
TAPE SPEED	Speed: 23.39 mm/s Record/Playback Time 30min. with EC30 FF/REW Time less than 3 min with EC30
CAMERA	PICK-UP ELEMENT: CCD STANDARD ILLUMINATION: 1,400 lux MINIMUM REQUIRED ILLUMINATION: 10 lux LENS: Built-in 6:1 Power Zoom Lens with MACRO Function, Auto Iris, Auto Focus System, F1.2 (9-54 mm), VIEW FINDER: 2/3" Electric View Finder
VIDEO	4 rotary videoheads 1 flying erase head OUTPUT: 1Vp-p 75Ω
AUDIO	1 Stationary audiohead Output: -8dB 600Ω unbalanced
WEIGHT	Approx. 1.3 kg (without Battery Pack)
DIMENSIONS	124(W)x140(H)X328(D) mm

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Technical Information

Service Caution

1. Servicing the VTR Section

When servicing the VTR section, connection of the extension cabies and Y/C separator are necessary as shown in Fig. S1, S2.

Servicing Fixtures (VTR Section)

PART NO.	PART NAME	PCS	CONNECTION
4822 321 60385	Extension Cable (26P)	1	P2001~P2601
4822 321 23178	Extension Cable (20P)	1	P5001~P3501
4822 321 22747	Extension Cable (2P)	1	P6009~LOADING MOTOR
4822 321 60383	Extension Cable (3P)	1	P6005~MODE SELECT SW
4822 395 90255	Y/C Separator	1	———
4822 321 60381	Extension Cable (14P)	1	P3502~4822 321 23181
4822 321 23181	Connector	1	Y/C Separator~ 4822 395 90255

Fig. S1

Connection Method of Extension Cables

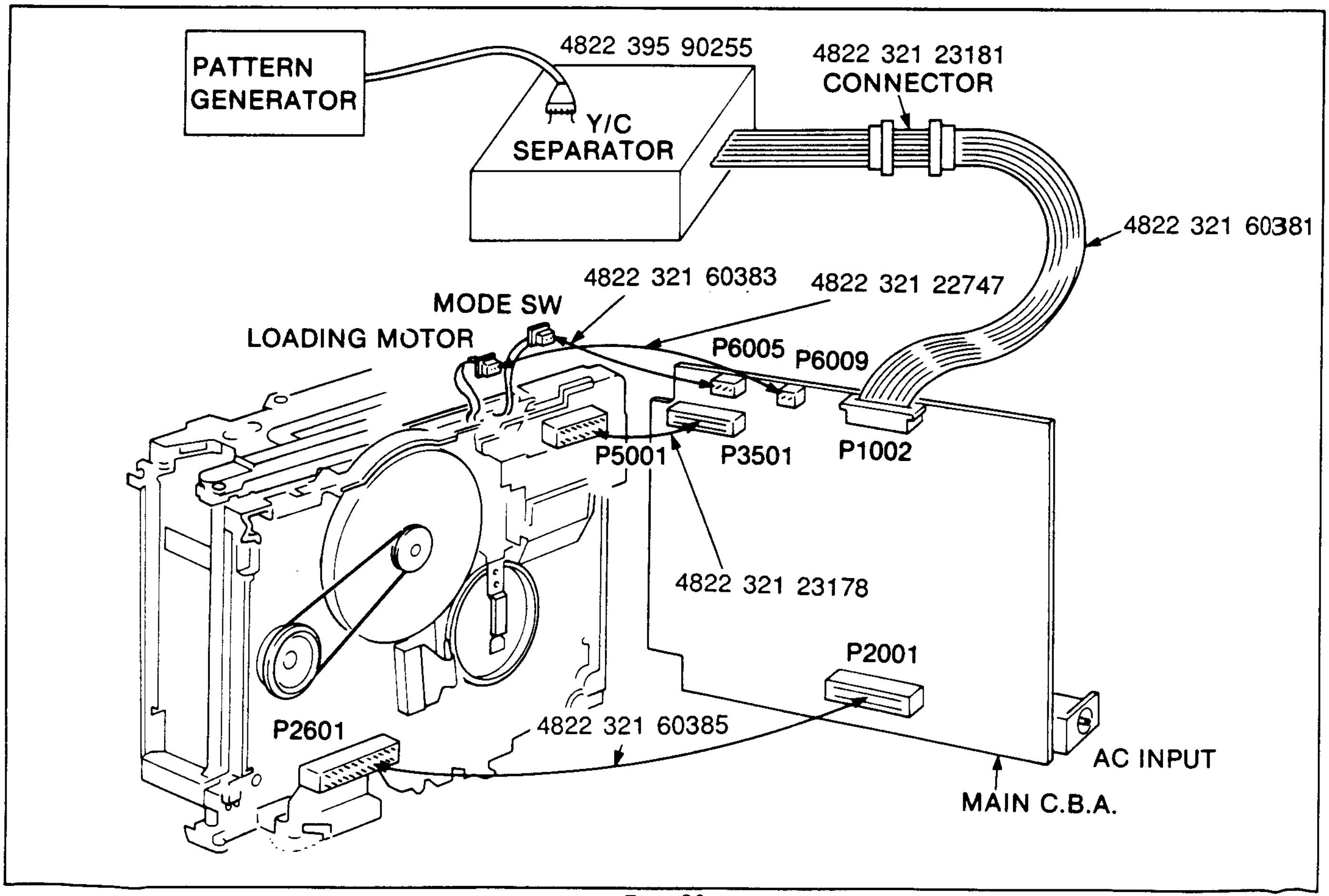

PATTERN GENERATOR
4822 395 90255
Y/C SEPARATOR
4822 321 23181
CONNECTOR
4822 321 60381
4822 321 60383
4822 321 22747
MODE SW
LOADING MOTOR
P6005
P6009
P5001
P3501
P1002
4822 321 23178
P2001
P2601
4822 321 60385
AC INPUT
MAIN C.B.A.

Fig. S2

CONTENTS

SPECIFICATIONS

TECHNICAL INFORMATION 1-4

ADJUSTMENT PROCEDURES

2-1 Disassembly procedures 2-1
2-2 Procedure for cleaning upper cylinder unit 2-6
2-3 Replacement and adjustment procedures 2-6
Service fixtures & tools 2-18
2-4 Electrical adjustment procedures 2-19
Location of testpoints and controls (1) 2-35
Location of testpoints and controls (2) 2-36

BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1 Camera stage block diagram 3-1
3-2 Luminance & chrominance block diagram 3-5
3-3 System control block diagram 3-9
3-4 Servo block diagram 3-12
3-5 Power supply block diagram 3-15
3-6 AWT (3) schematic diagram 3-17
3-7 AWT (3) C.B.A 3-17
3-8 Process schematic diagram 3-19
3-9 Process C.B.A 3-23
3-10 Auto focus C.B.A 3-27
3-11 Auto focus schematic diagram 3-31
3-12 Sensor schematic diagram 3-33
3-13 Sensor C.B.A 3-35
3-14 VTR operation schematic diagram 3-37
3-15 VTR operation C.B.A 3-37
3-16 Camera operation schematic diagram 3-39
3-17 Camera operation C.B.A 3-39
3-18 E.V.F. schematic diagram 3-41
3-19 E.V.F C.B.A 3-43
3-20 Power supply schematic diagram 3-44
3-21 System control schematic diagram 3-47
3-22 Servo schematic diagram 3-51
3-23 Sub video schematic diagram 3-54
3-24 Audio schematic diagram 3-55
3-25 Main C.B.A (power supply, servo, sub video, audio,system control section) 3-57
3-26 Luminance & chrominance pack schematic diagram 3-61
3-27 Luminance & chrominance pack C.B.A 3-65
3-28 Motor drive schematic diagram 3-68
3-29 Motor drive C.B.A 3-71
3-30 Head amp. schematic diagram 3-73
3-31 Head amp. C.B.A 3-75
3-32 Circuit board layout 3-77
3-33 Camera interconnection schematic diagram 3-79
3-34 VTR interconnection schematic diagram 3-81

EXPLODED VIEWS & PARTS LIST

4-1 Exploded views 4-1
-VTR mechanism section 4-1
-camera lens section 4-2
-chassis & frame section 4-3
-E.V.F section 4-5
-packing parts & accessories section 4-6
4-2 Mechanical parts list 4-7
4-3 Electrical parts list 4-9

2. Servicing the Camera Section

When servicing the camera section connection of extension cables and Diffusion Plate are necessary as shown in Fig. S3, S4.

Servicing Fixture (Camera Section)

PART NO.	PART NAME	PCS	CONNECTION
4822 321 60378	Extension Cable (3P)	1	P704~ACTUATOR UNIT
4822 321 60379	Extension Cable (6P)	1	P701~FOCUS & ZOOM SENSOR
4822 321 60384	Extension Cable (5P)	1	FP302~FP601
4822 395 30279	Extension Cable (18P)	1	B301~B201
4822 321 60382	Extension Cable (6P)	1	P703~FOCUS MOTOR & IRIS MOTOR
4822 466 70675	Diffusion Plate	1	———

Fig. S3

Connection Method of Extension Cables

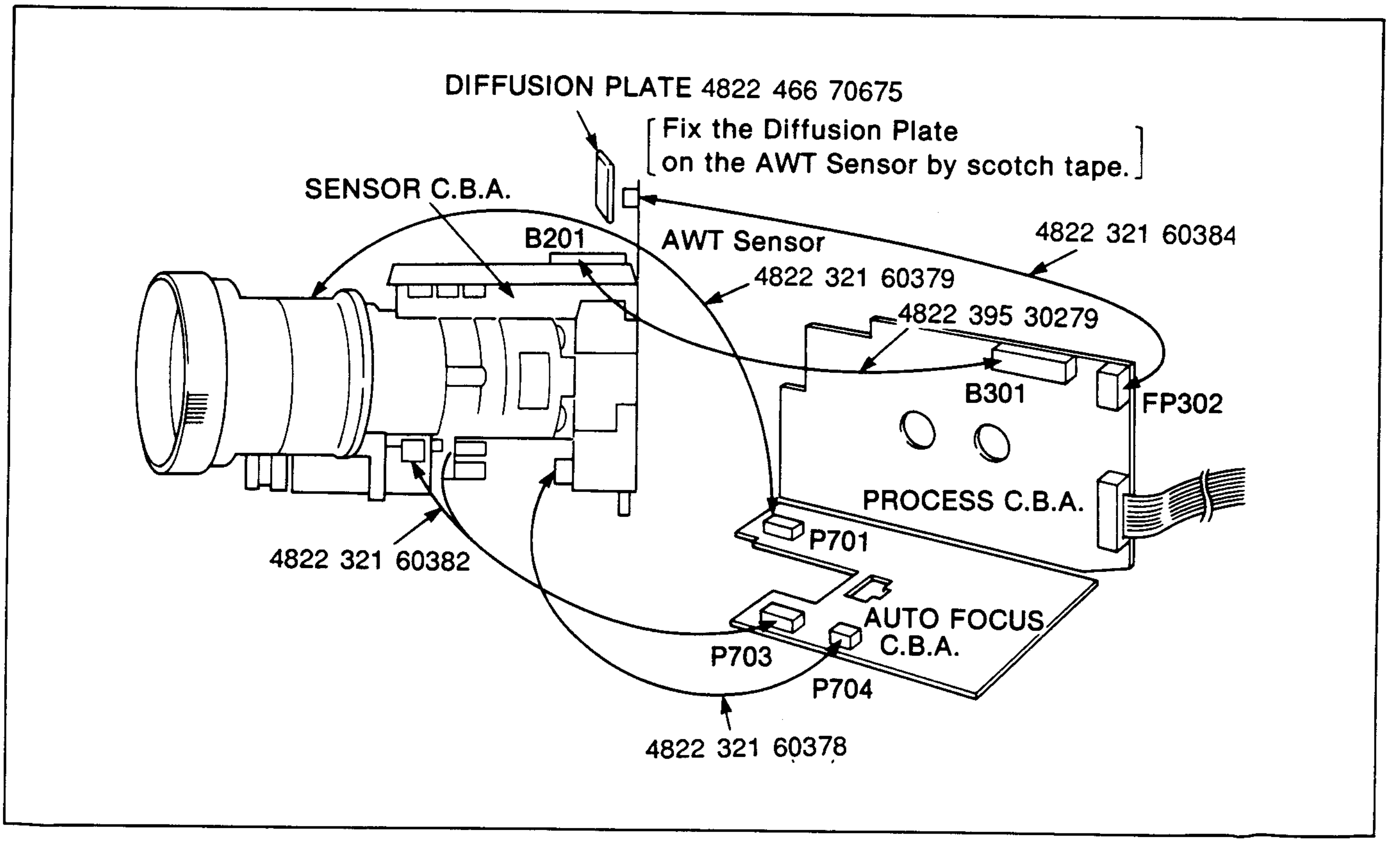

DIFFUSION PLATE 4822 466 70675
[Fix the Diffusion Plate on the AWT Sensor by scotch tape.]
SENSOR C.B.A.
B201
AWT Sensor
4822 321 60384
4822 321 60379
4822 395 30279
B301
FP302
PROCESS C.B.A.
P701
4822 321 60382
AUTO FOCUS C.B.A.
P703
P704
4822 321 60378

Fig. S4

3. How To Use Camera Holder Arm **4822 432 60215**

This Camera Holder Arm which is adjustable the span must be mounted to **4822 395 90566 (Camera Holder). It can be used with 4822 256 91287 for camera adjustment or checking.**

(A) --- **4822 256 91287** Holder Spacer (2pcs.)
(B) --- **4822 432 60215** Camera Holder Arm
(C) --- **4822 502 13254** Screw (2pcs.)
(D) --- **4822 395 90566** Camera Holder

1. Fix the Holder Arm (4) and (5) temporarily by screw (1) as shown in Fig.S5.
2. Mount the Camera Holder Arm (B) to the Camera Holder (D) by screws (2) and (3) as shown in Fig. S6.
3. Tightn the screws (C) with the Holder Spacers (A) as shown in Fig. S5.

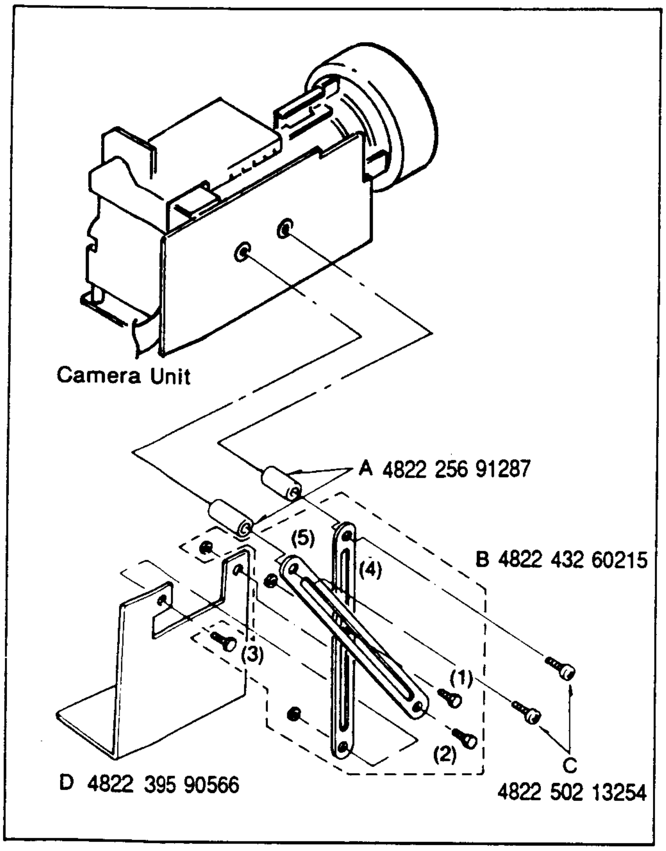

Camera Unit
A 4822 256 91287
(5)
(4)
B 4822 432 60215
(3)
(1)
(2)
C
D 4822 395 90566
4822 502 13254

Fig. S5

4. How To Connect the Y/C Separator and Y/C Separator Connection Cable

When the Y/C Separator Connection Cable **4822 321 23181** is used to connect to Y/C Separator the caution should be paid the following items:

*Cut off the marked portion of Y/C Separator output connector as shown in Fig.S7

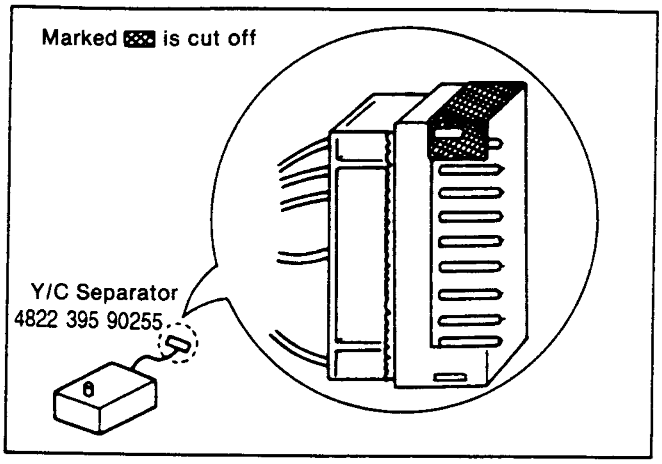

Marked ▨ is cut off
Y/C Separator
4822 395 90255

Fig. S7

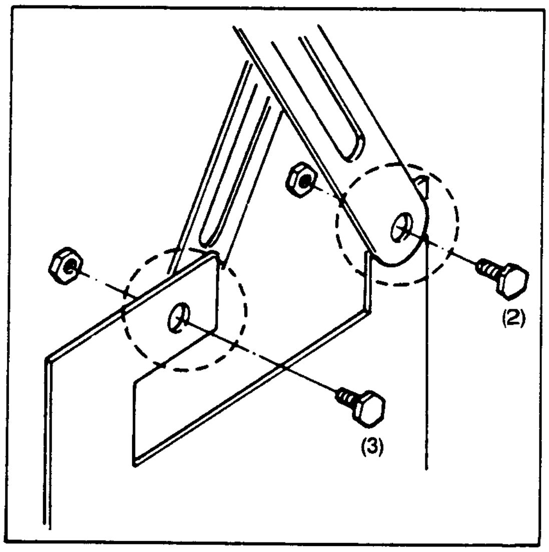


Fig. S6

5. Set Tracking Control to the Fixed position

If the Tracking Control is required to be in the fixed (neutral) position, push both of the tracking Control Up/Down Switchs, on the Main C.B.A., in at the same time in Playback Mode.

6. Manual Eject–Tape in and Carriage closed

1. Remove Cassette Cover by removing 2 Screws.
2. Push on upper end of Lock Lever to release cassette carriage.

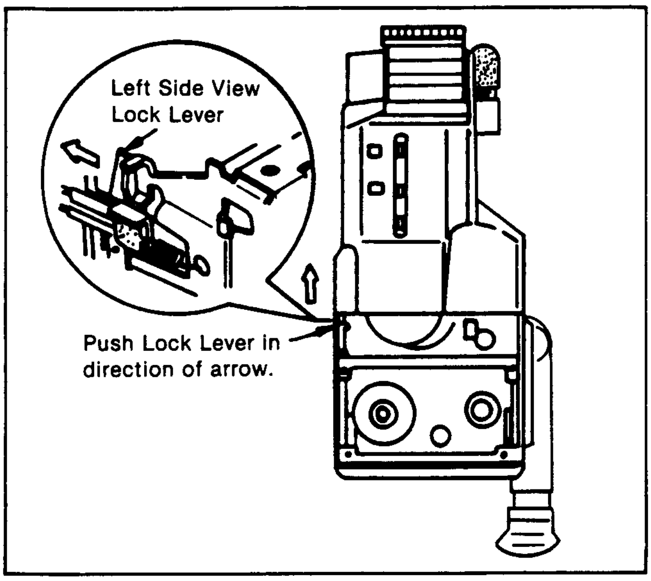

Left Side View
Lock Lever
Push Lock Lever in direction of arrow.

Fig. S8

7. Elimination of Tape slack

Before inserting the Cassette Tape in the VHS–C Movie, take up slack in the tape by turning the Takeup Tape Gear on the side of the Cassette Tape. Turn it in the direction of the arrow until no slack is evident and opposite reel begins to turn.

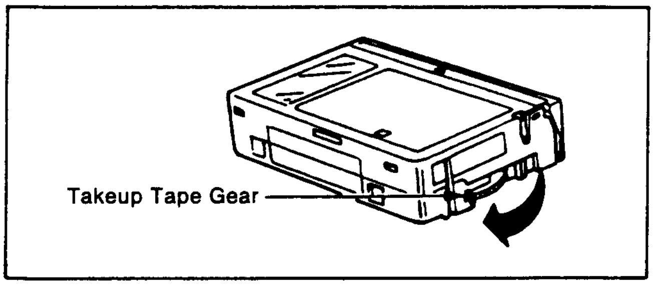

Takeup Tape Gear

Fig. S9

8. Insertion (or Removal) of cassette Tape

As in Fig. 5, hold the tape vertically with fingers and thumb to insert or remove the tape. (Be sure to eliminate slack before inserting the tape.)

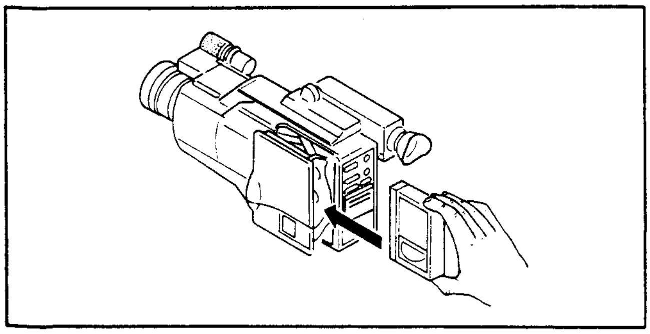


Fig. S10

9. Connection of the Flexible Cables to Trap Connectors

a. Removal

1. On the trap Connector, pull out on both ends of the Locking Tab Surrounding the cable end to release the Trap on the Connector. Then pull Flexible Cable out to remove as shown in Fig. 6.

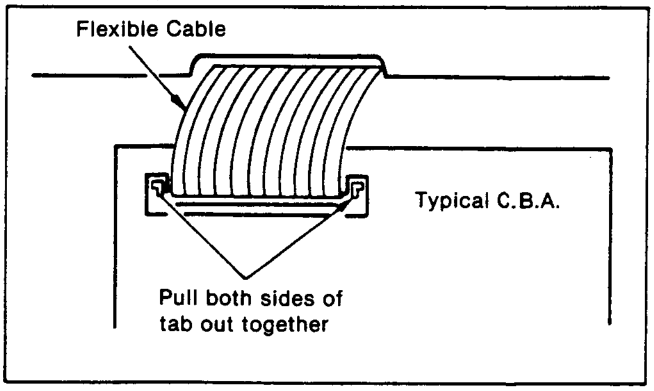

Flexible Cable
Typical C.B.A.
Pull both sides of tab out together

Fig. S11

b. Installation

1. Insert the end of the Flexible Cable into the Trap Connector so it lays smoothly across the slot.
2. Press the middle of the cable firmly against the Trap Connector slot, and hold it securly.
3. Without pinching the Cable, press the Locking Tabs in against the Trap Connector until both ends snap into their locked positions.
4. Pull lightly on the Cable to check for positive connection.

Note:

1. Take care when removing or installing the Flexible Cable to prevent Cable damage.

10. Service of Operation Bracket Unit

When removing and reinstalling the Operation Bracket Unit and Switch Cover, first, install the Switch Cover over the Operation Key portion (CAMERA MODE) of the Operation Bracket Unit, and then install assembly parts.

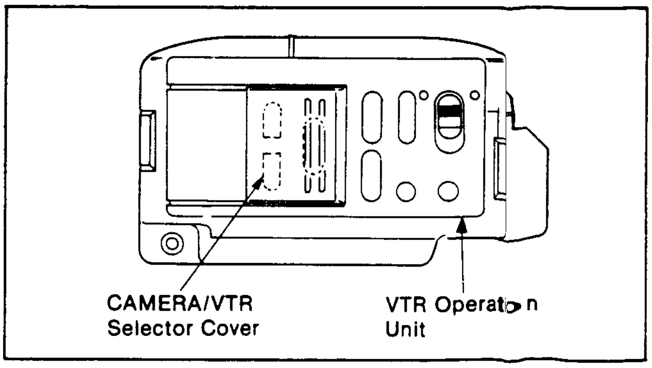

CAMERA/VTR Selector Cover
VTR Operation Unit

Fig. S12

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLY PROCEDURES

2-1-1. DISASSEMBLY FLOW CHART

This flow chart indicates disassembly steps for the cabinet parts and the P.C.boards in order to find the items necessary for servicing.
When reassembling perform the steps in the reverse order.

Note:
(1) When removing the cabinet, work with care so as not to break the locking tabs.
(2) Place a cloth or some other soft material under the P.C.Boards or Unit to prevent damage.
(3) When re-installing, ensure that the connectors are connected and electrical components have not been damaged.
(4) Do not supply power to the Unit during disassembly.

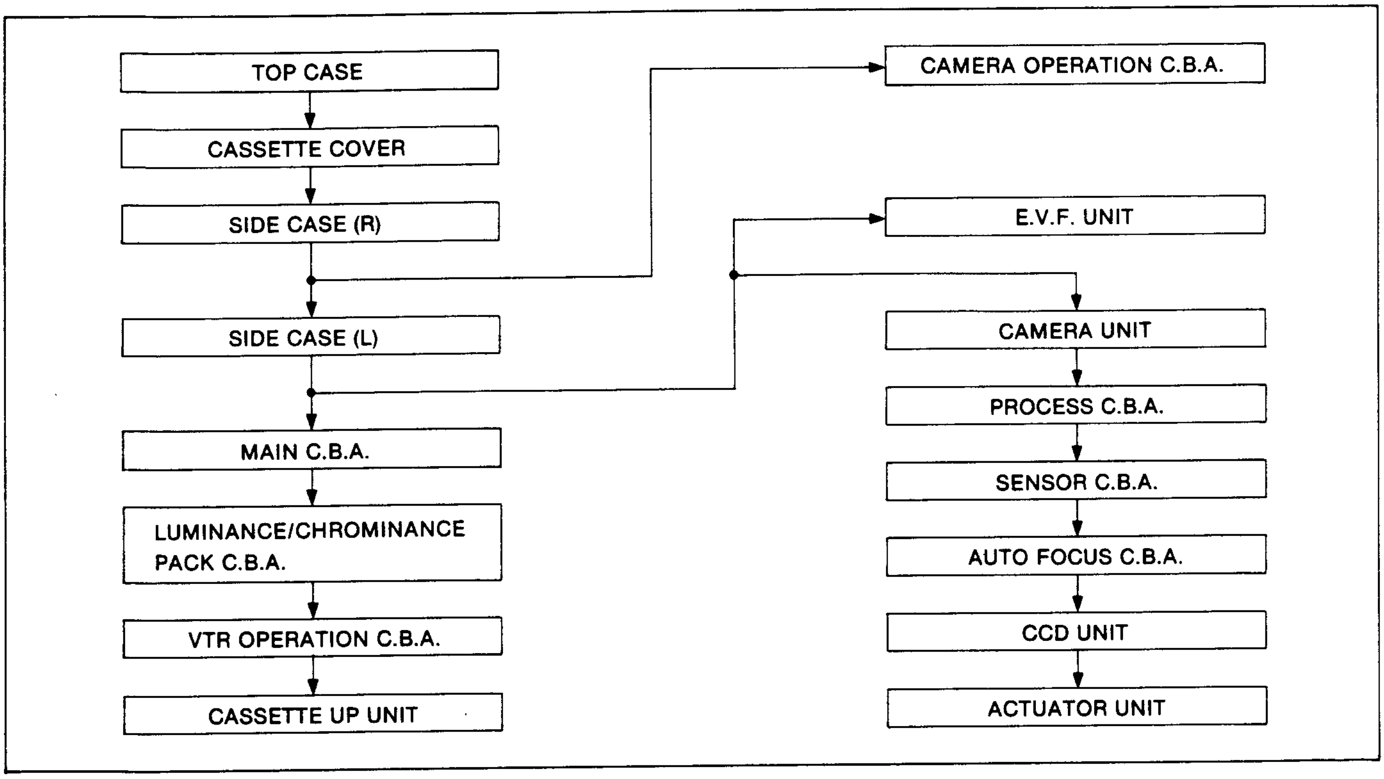

TOP CASE
CASSETTE COVER
SIDE CASE (R)
SIDE CASE (L)
MAIN C.B.A.
LUMINANCE/CHROMINANCE PACK C.B.A.
VTR OPERATION C.B.A.
CASSETTE UP UNIT
CAMERA OPERATION C.B.A.
E.V.F. UNIT
CAMERA UNIT
PROCESS C.B.A.
SENSOR C.B.A.
AUTO FOCUS C.B.A.
CCD UNIT
ACTUATOR UNIT

Fig.D1

2-1-2. VTR SECTION

1. Removal of Top Case

(1) Remove 3screws (A).
(2) Lift the Top Case from rear side.

2. Removal of Cassette Cover

(1) Remove 2 screws (B).
(2) Slide the cassette cover to as shown in Fig.D2.

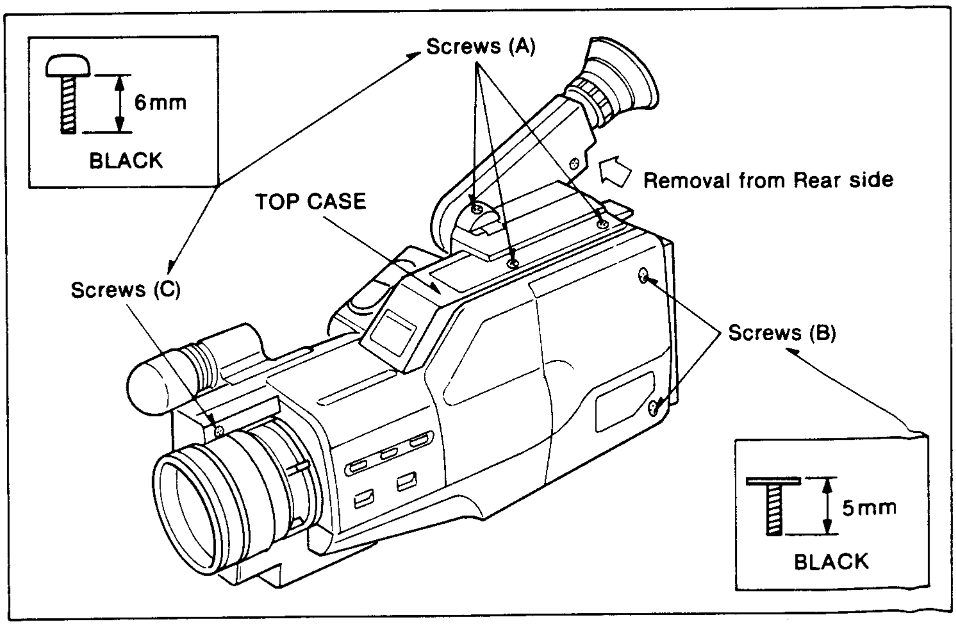

6mm
BLACK
Screws (A)
Removal from Rear side
TOP CASE
Screws (C)
Screws (B)
5mm
BLACK

Fig. D2

3. Removal of Side Case (R)

(1) Remove screw (C) as shown in Fig.D2 and 4 screws (D).
(2) Dicsonnect the connector P001, P002 and FP001 on camera operation C.B.A.
(3) Remove the side case (R).

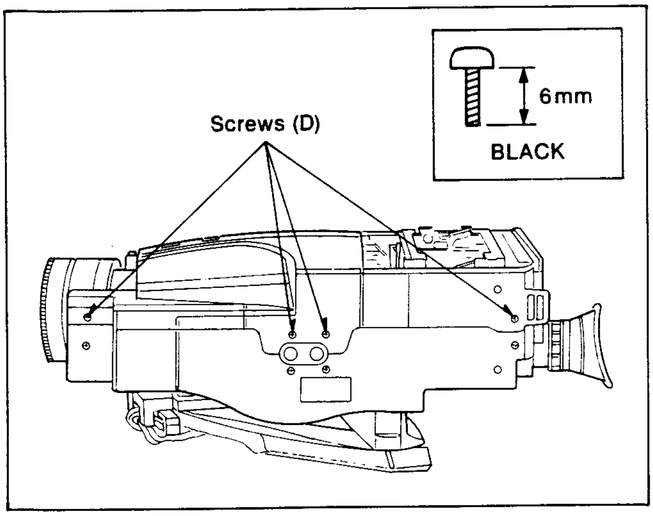

6mm
BLACK
Screws (D)

Fig.D3

4. Removal of Side Case (L)

(1) Remove 4 screw (E) as shown in Fig.D4 and 3 screws (F) as shown in Fig.D6.

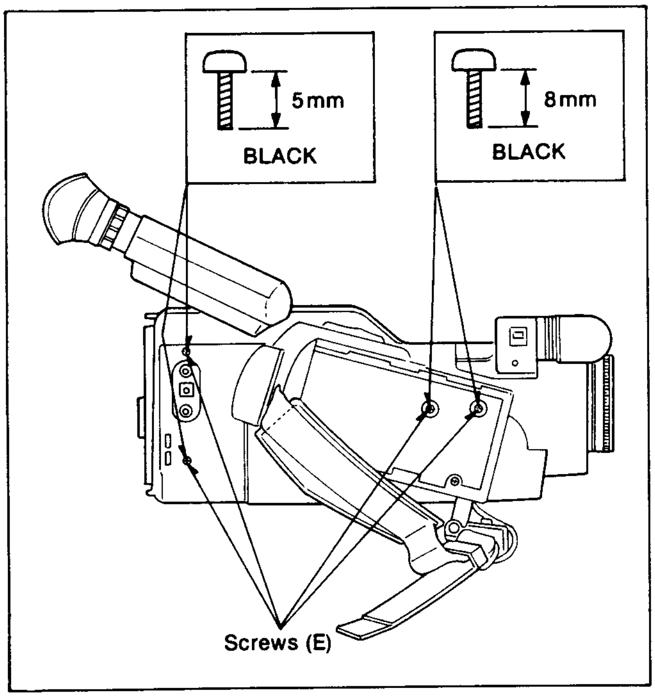

5mm
BLACK
8mm
BLACK
Screws (E)

Fig.D4

(2) Remove the side case (L) slightly.
(3) Disconnect the connector P307 on Process C.B.A.

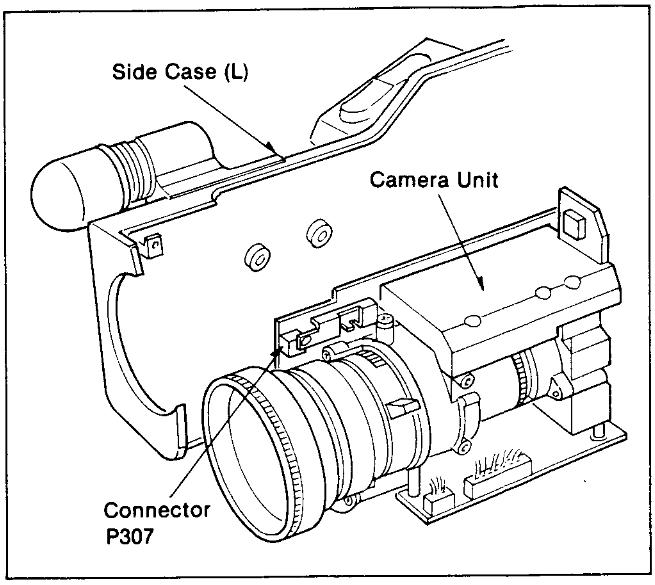

Side Case (L)
Camera Unit
Connector
P307

Fig.D5

(4) Disconnect the Flexible card P1002 on Main C.B.A., P4004(From Battery Terminal),P1001 (From Battery Terminal),P4001(From MIC unit) and P6012(From E.V.F unit).
(5) Remove the side case (R).

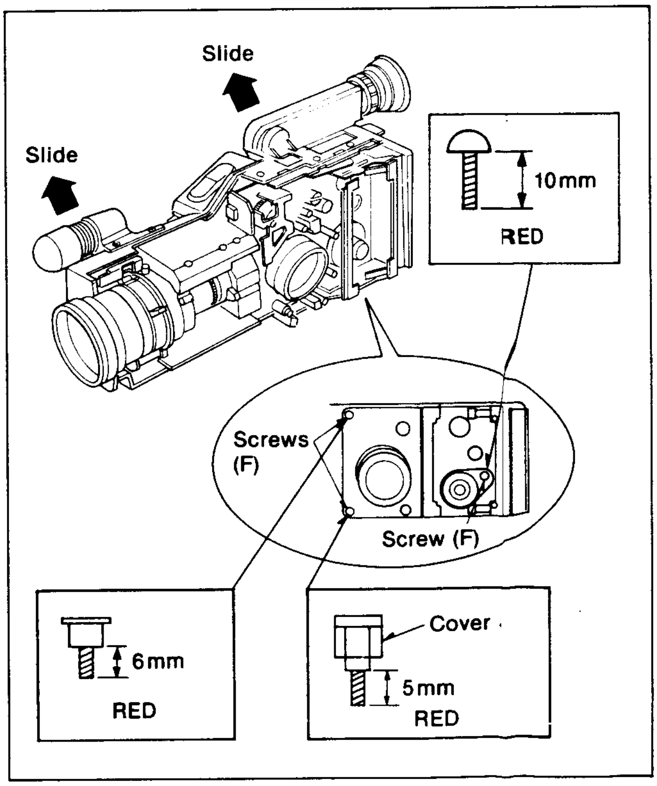

Slide
Slide
10mm
RED
Screws
(F)
Screw (F)
6mm
RED
Cover
5mm
RED

Fig.D6

5. Removal of E.V.F. Unit

(1) Remove 2screws (G) to remove.

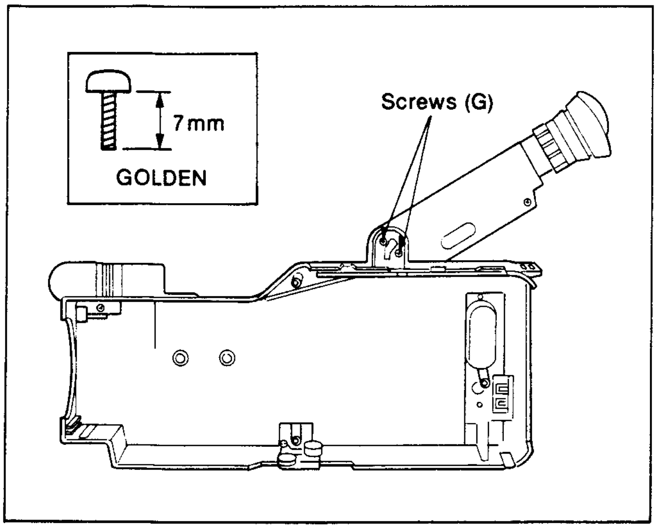

7mm
GOLDEN
Screws (G)

Fig.D7

6. Removal of Main C.B.A.

(1) Remove screw (H) to remove the Main C.B.A.
(2) Disconnect the connectors P6005, P6009, P3501 and P2001.

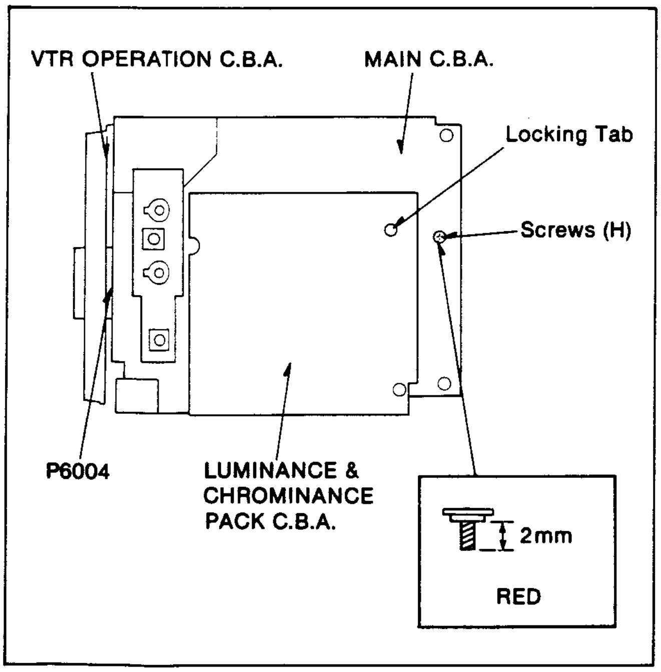

VTR OPERATION C.B.A.
MAIN C.B.A.
Locking Tab
Screws (H)
P6004
LUMINANCE & CHROMINANCE PACK C.B.A.
2mm
RED

Fig.D8

7. Removal of Luminance & Chrominance Pack C.B.A.

(1) Unlock locking tab to lift it up.
(2) Remove the Luminance & Chrominance Pack C.B.A.

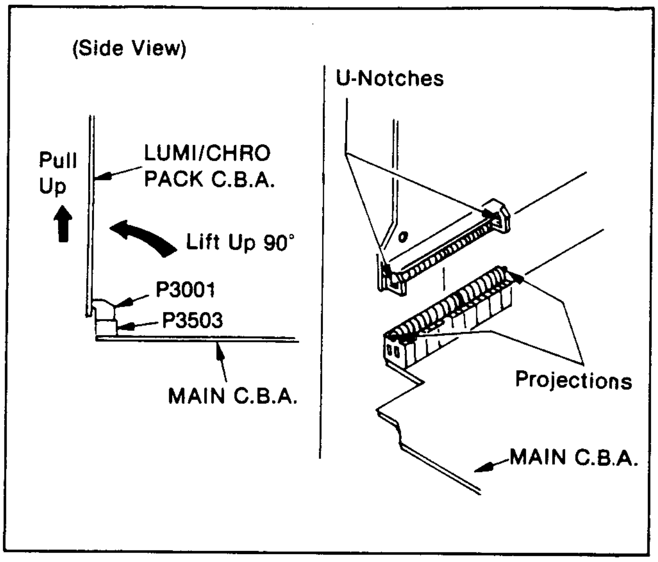

(Side View)
U-Notches
Pull Up
LUMI/CHRO PACK C.B.A.
Lift Up 90°
P3001
P3503
MAIN C.B.A.
Projections
MAIN C.B.A.

Fig.D9

8. Removal of VTR Operation C.B.A.

(1) Disconnect the connector P6004 to remove, VTR Opearation C.B.A.

9. Removal of Camera Operation C.B.A.

(1) Remove 5 screws (I) to remove Camera Operation C.B.A.

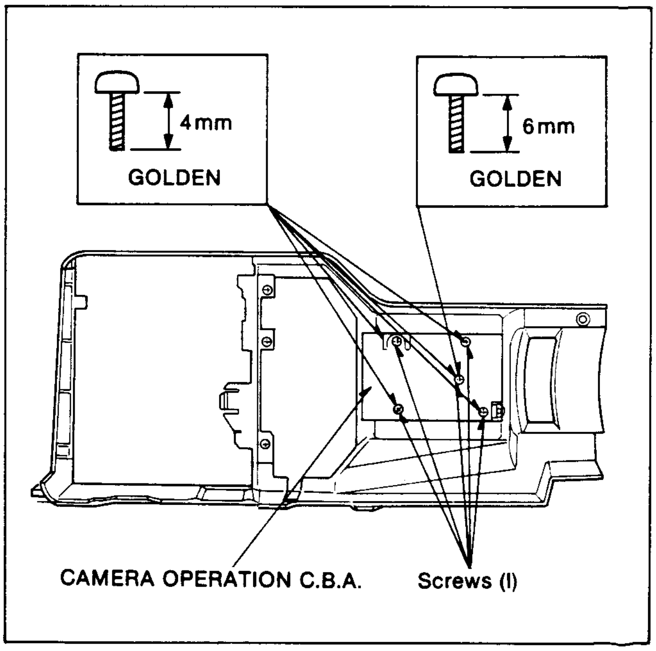

4mm
GOLDEN
6mm
GOLDEN
CAMERA OPERATION C.B.A.
Screws (I)

Fig.D10

10. Removal of Cassette Up Unit

(1) Remove 2 screws (J).
(2) Slide the cassette up unit in direction of allow and release the pins on the moving levers of cassette up unit from the enlarged circular insertion hole at end of the cassette guide slot.

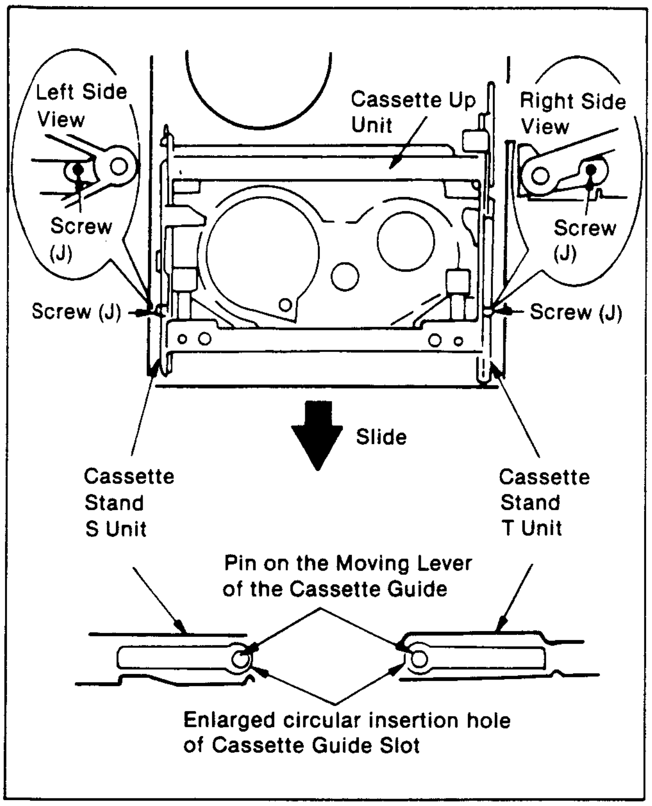

Left Side View
Screw (J)
Screw (J)
Cassette Up Unit
Right Side View
Screw (J)
Screw (J)
Slide
Cassette Stand S Unit
Cassette Stand T Unit
Pin on the Moving Lever of the Cassette Guide
Enlarged circular insertion hole of Cassette Guide Slot

Fig.D11

2-1-3. CAMERA SECTION

1. Removal of Process C.B.A.

(1) Remove 2 screws (K) and disconnect the connectors P303,P308,B305,B301, P309 and flexible card FP302 on process C.B.A.
(2) Remove the process C.B.A.

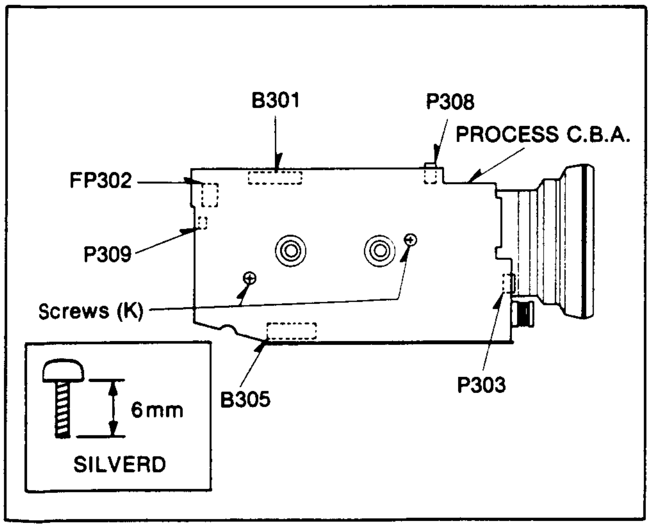

B301
P308
PROCESS C.B.A.
FP302
P309
Screws (K)
6mm
SILVERD
B305
P303

Fig.D12

2. Removal of Sensor C.B.A.

(1) Remove 2 screws (L) to remove the shield box.

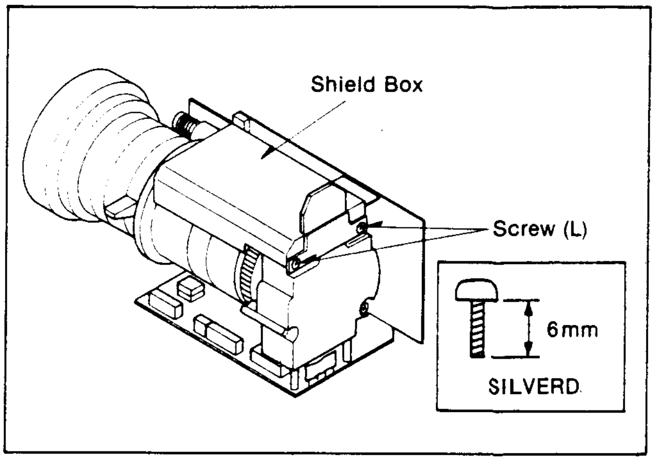

Shield Box
Screw (L)
6mm
SILVERD

Fig.D13

(2) Remove 2 screws (M) and disconnect the flexible card FP201 on sensor C.B.A.
(3) Remove the sensor C.B.A.

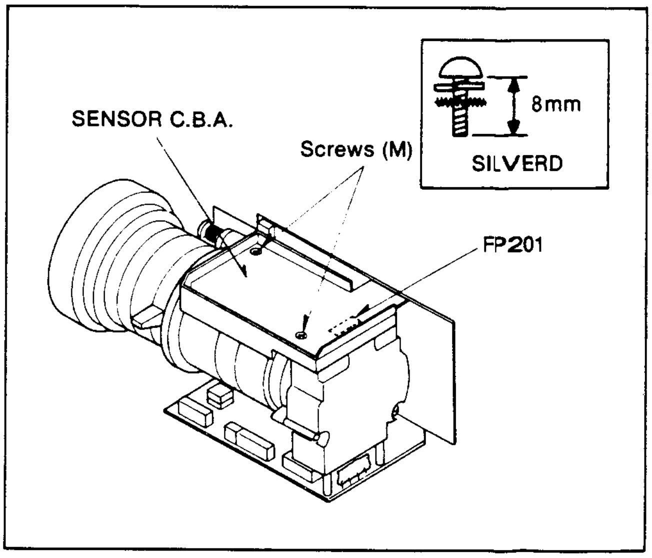

SENSOR C.B.A.
Screws (M)
8mm
SILVERD
FP201

Fig.D14

3. Removal of Auto Focus C.B.A.

(1) Remove 3 screws (N) and disconnect the connectors P703,P704,P705,P701 on Auto Focus C.B.A.
(2) Remove Auto Focus C.B.A.

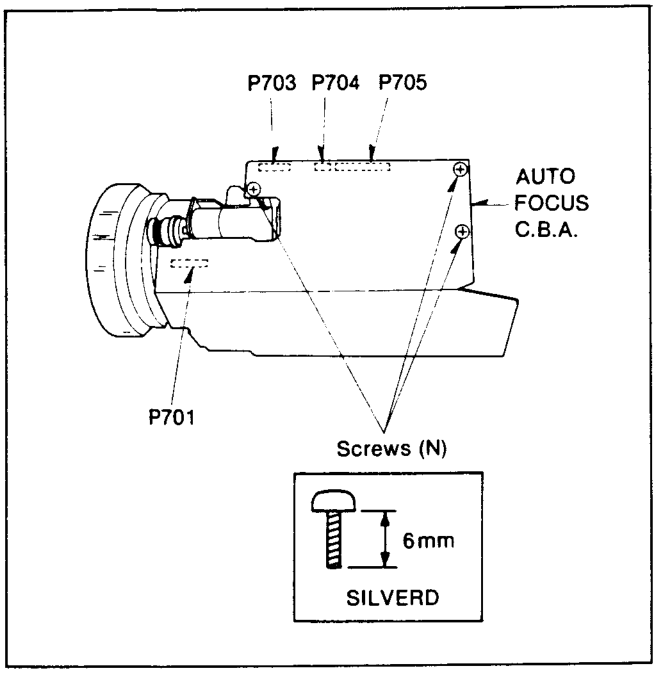

P703
P704
P705
AUTO FOCUS C.B.A.
P701
Screws (N)
6mm
SILVERD

Fig.D15

4. Removal of CCD Unit

(1) Remove 2 screws (O).
(2) Remove 2 screws (P) and then take out the CCD Shield box.
(3) Remove 2 screws (Q) and then take out the CCD Unit.

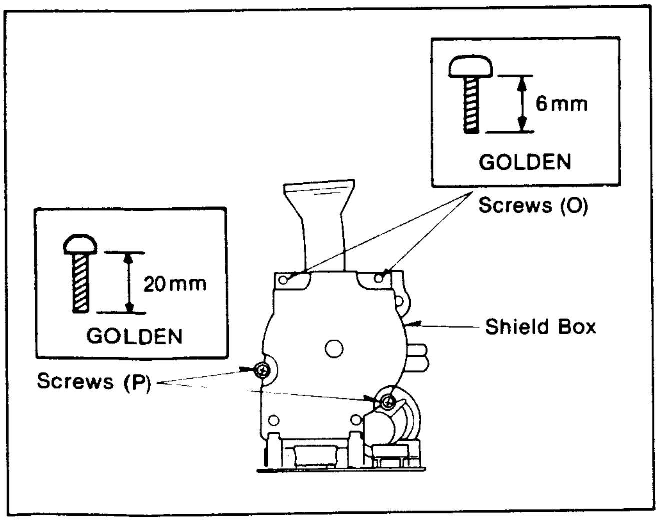

6mm
GOLDEN
Screws (O)
20mm
GOLDEN
Shield Box
Screws (P)

Fig.D16

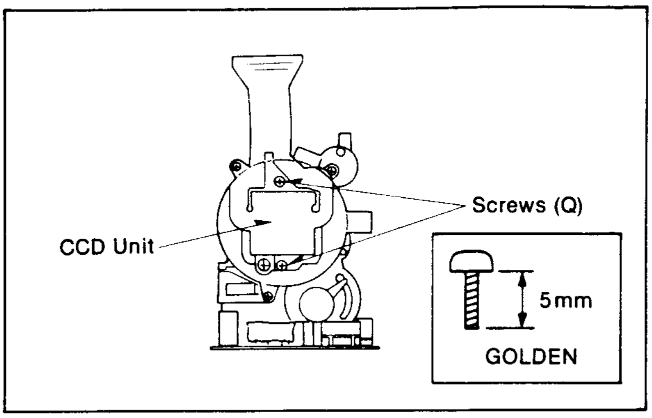

Screws (Q)
CCD Unit
5mm
GOLDEN

Fig.D17

5. Removal of Actuator Unit

(1) Remove 3 screws (R) and remove actuator unit.

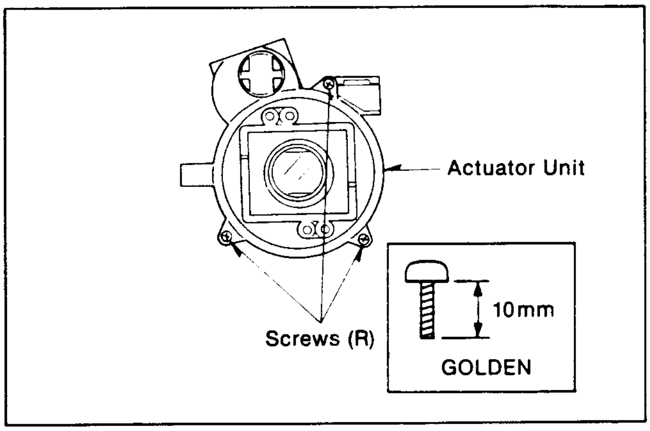

Actuator Unit
Screws (R)
10mm
GOLDEN

Fig.D18

2-1-4. E.V.F. SECTION

1. Removal of E.V.F. Case

(1) Remove 2 screws (S) to remove the E.V.F. case.

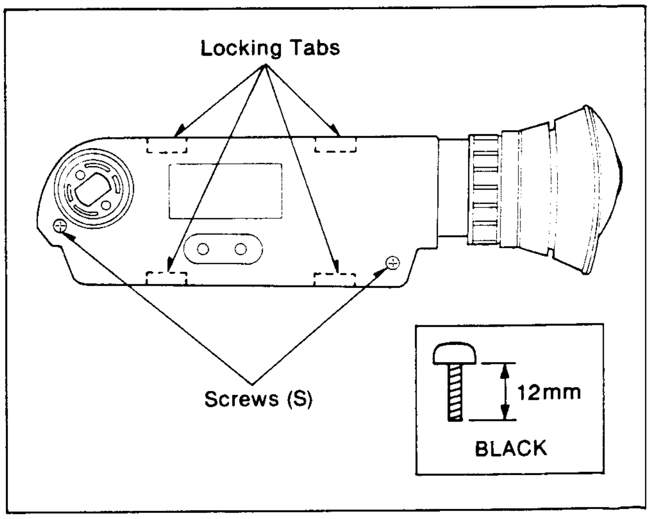

Locking Tabs
Screws (S)
12mm
BLACK

Fig.D19

2-2. PROCEDURE FOR CLEANING UPPER CYLINDER UNIT

(1) Position the Video Head to permit access for cleaning, and hold the Upper Cylinder to keep it from turning while cleaning.
(2) Gently rub the Video Head in the direction of tape travel with a Head Cleaning Stick 4822 395 90256 moistened with Freon TF.
(3) Repeat for the other Video Heads.

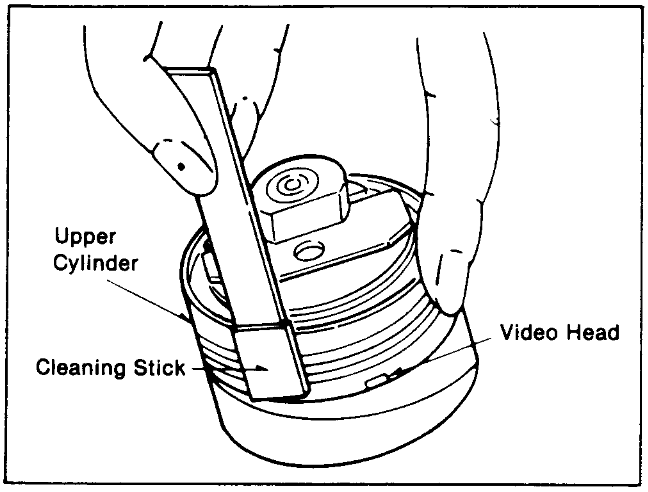

Upper Cylinder
Video Head
Cleaning Stick

Fig. U1

Note:
(1) Do not rub vertically.
(2) Do not apply any pressure to the head. If the contaminant is not easily removed, continued gentle wiping will usually remove it.

2-3. REPLACEMENT AND ADJUSTMENT PROCEDURES

2-3-1. REPLACEMENT OF FOCUS LENS UNIT

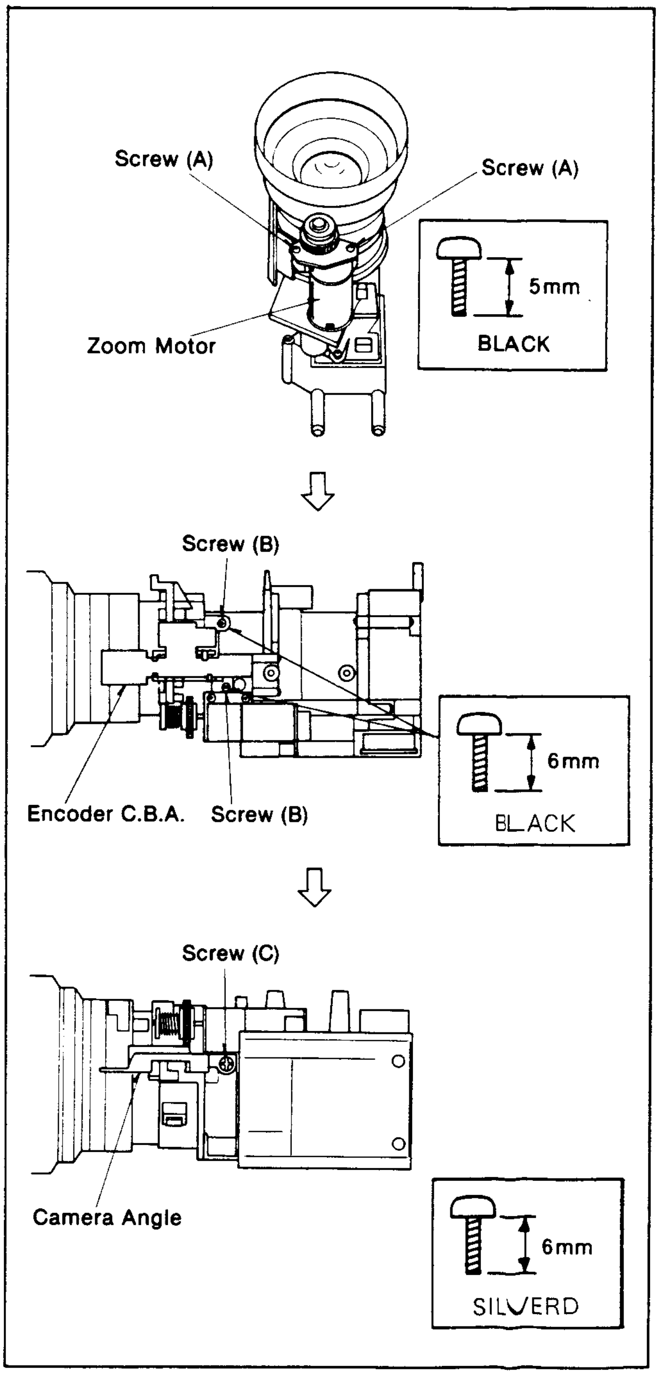

Screw (A)
Screw (A)
5mm
BLACK
Zoom Motor
Screw (B)
6mm
BLACK
Encoder C.B.A.
Screw (B)
Screw (C)
Camera Angle
6mm
SILVERD

Fig.M1

(1). Remove the camera unit from the VHS-C Movie.
(2). Remove the C.B.As (Process, Auto Focus, Sensor) from the camera unit.
(3). Unscrew the two screws (A) and remove the zoom motor.
(4). Unscrew the two screws (B) and remove the encoder C.B.A.
(5). Unscrew the screw (C) and remove the camera angle.

(6). Remove the focus fastener and tape as shown in Fig.M2.
(7). Remove the focus ring by turning the focus adjustment pitch to the counter clockwise.

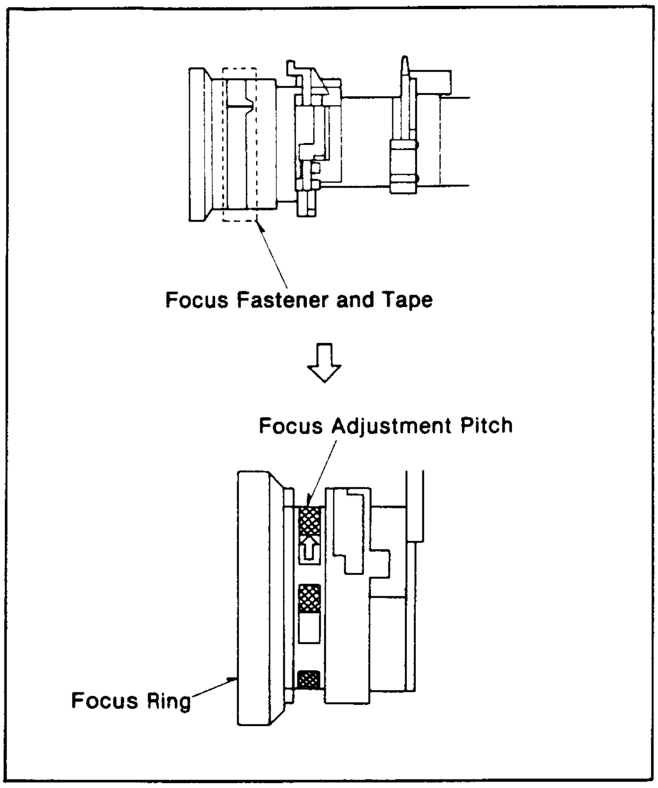

Focus Fastener and Tape
Focus Adjustment Pitch
Focus Ring

Fig.M2

(8). Unscrew the four screws (D) and remove the focus lens unit with iris unit as shown in Fig.M3.
(9). Remove the iris unit from focus lens unit and replace the focus lens unit.

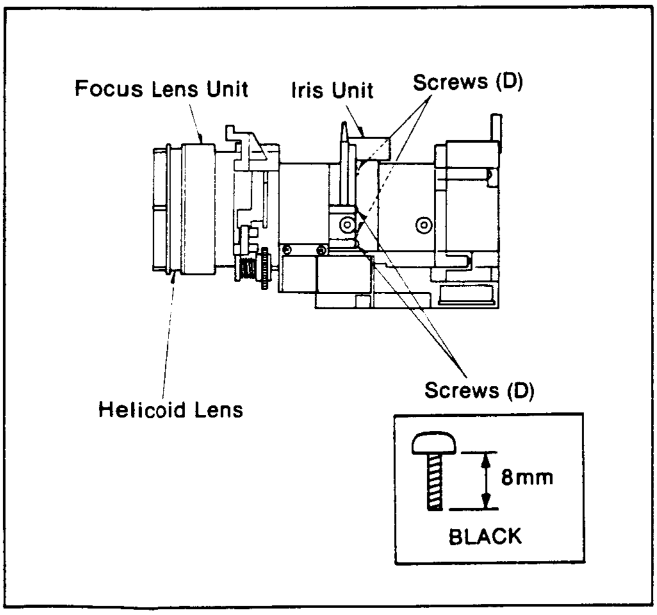

Focus Lens Unit
Iris Unit
Screws (D)
Screws (D)
Helicoid Lens
8mm
BLACK

Fig.M3

[Adjustment Procedures]

Note:
Do not remove the helicoid lens from focus lens unit because it has the relation of pairing between them.

If the helicoid lens is happened to be removed, the helicoid lens should be installed as following step.

a. Install the helicoid lens so that the projection with groove on helicoid lens comes to projection on lens unit as shown in Fig.M4.

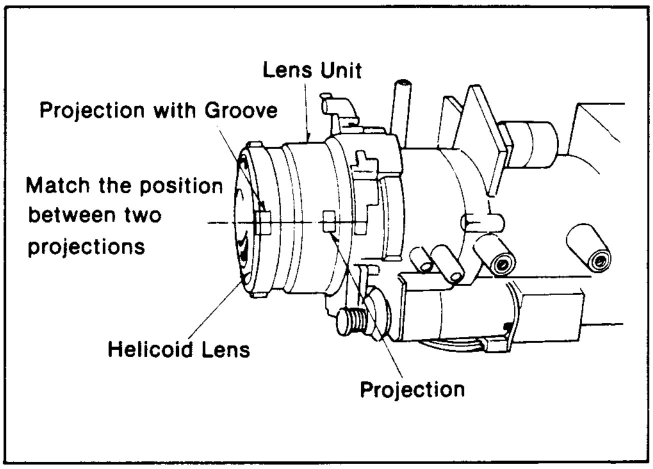

Lens Unit
Projection with Groove
Match the position between two projections
Helicoid Lens
Projection

Fig. M4

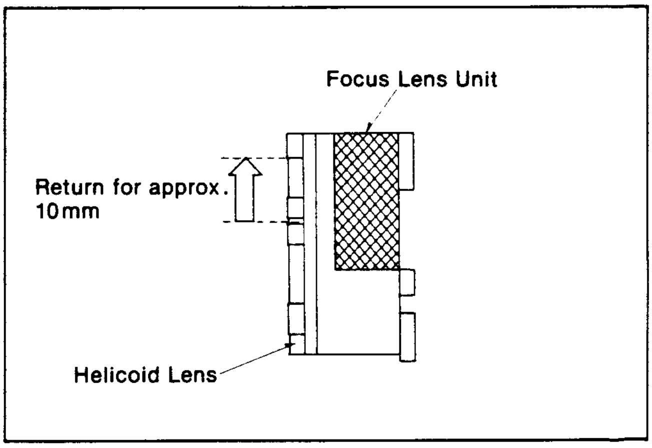

Focus Lens Unit
Return for approx. 10mm
Helicoid Lens

Fig. M5

(10). After replacing the focus lens unit, install the iris unit to focus lens unit.
(11). Install the focus lens unit with iris unit and then tighten the four screws (D) as shown in Fig. M3.
(12). Adjust the helicoid lens position as follows.

a. Turn the helicoid lens to fully clockwise and return it for approx. 10mm (so that next installation become easy) as shown in Fig.M5.

(13). Install the focus ring so that the infinity (∞) mark on focus ring is come to red-line on focus lens unit as shown in Fig.M6.

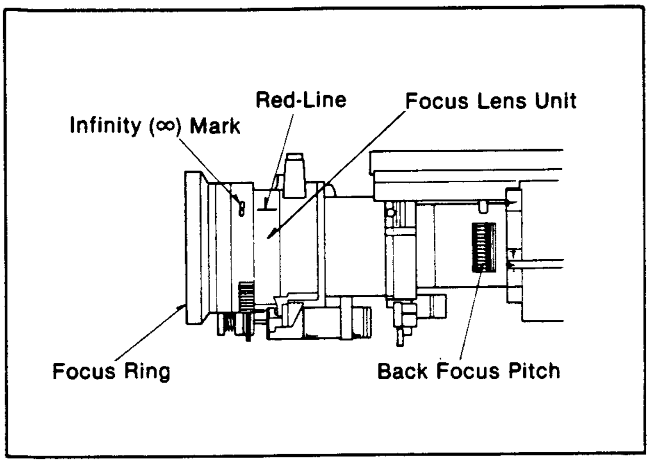


Fig.M5

(14). Install the C.B.As (Process, Auto Focus, Sensor, Encoder) and zoom motor in reverse assembly order.

(15). After installation of the focus ring ,adjust the position of focus adjustment pitch and back focus pitch as follows.

a. Aim the camera at the object in 3m distance from the surface of CCD unit (in 2.9m distance from focus ring).
b. Set the focus ring so that the 3m mark of distance indication on focus ring is come to red−line(Distance indication Line) on focus lens unit and keep the focus ring not to move during following adjustment.
c. Turn the zoom ring fully to "Tele" position (54mm position).
d. Adjust the focus adjustment pitch (refer to Fig. M2) to obtain the best focus and stick the tape(which was stuck on the unit before) on to the focus adjustment pitch(refer to Fig.M2).
e. Install the focus fastener as shown in Fig.M2.
f. Turn the zoom ring fully to "wide" position (9mm position).
g. Prepare the Hunting chart for object and aim the camera at the hunting chart 3m distance.
h. Zoom all the way in full tele position and focus the lens on the object.
i. Confirm that the focus ring indicates 3m.
j. Adjust the back focus pitch so that the sharpest focus is obtained.
k. Zoom all the way back and adjust the back focus pitch (refer to Fig.M6)so that the sharpest focus is obtained.
l. Repeat the procedure as follows, zoom in,focus,zoom out and adjust until the best focus is obtained over the entire zoom range.

2-3-2. REPLACEMENT OF CAPSTAN MOTOR UNIT

(1) Ensure Unit is in the STOP mode. Remove the Capstan Belt.
(2) Unlock Flexible Cable P2603 on the Drive C.B.A.

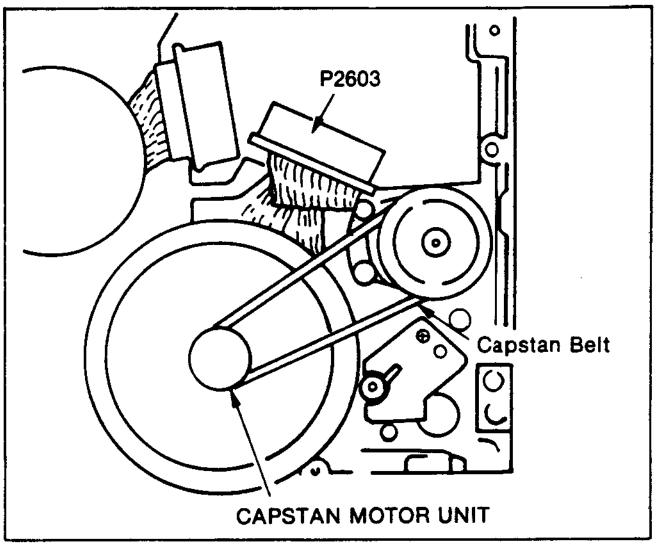


Fig.M6

(3) Remove the Cassette Up Holder. LP Head Amp, head Amp Holder and Mode Select Switch Unit.
(4) Take out the Idler Gear while pushing on the Tape Guide lever Unit unit until it clears the Idler Gear Teeth as shown in Fig.M7.

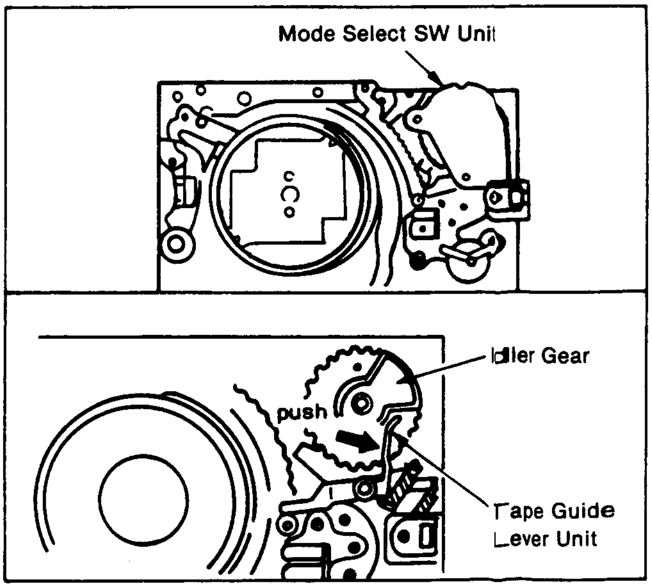


Fig.M7

(5) Remove 2 screws (B). Then remove screws (C) While slighty pushing on the Sector Gear Unit to remove screw (C) as shown in Fig.M8. Then remove the A/C Head Base Unit.

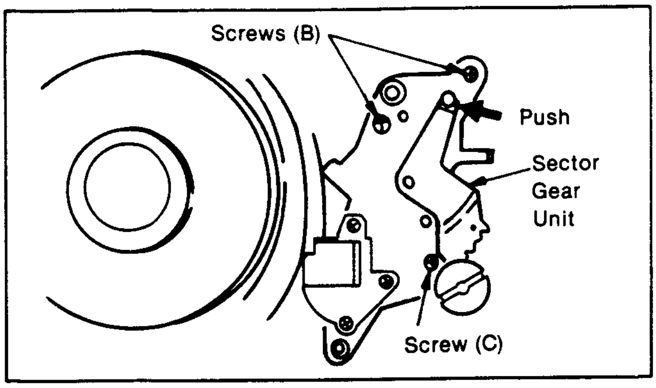

Screws (B)
Push
Sector Gear Unit
Screw (C)

Fig.M8

(6) Remove the Cut Washer and Motor Gear. Then place the Unit in play position completely by rotating loading Idle Gear clockwise as shown in Fig M9.

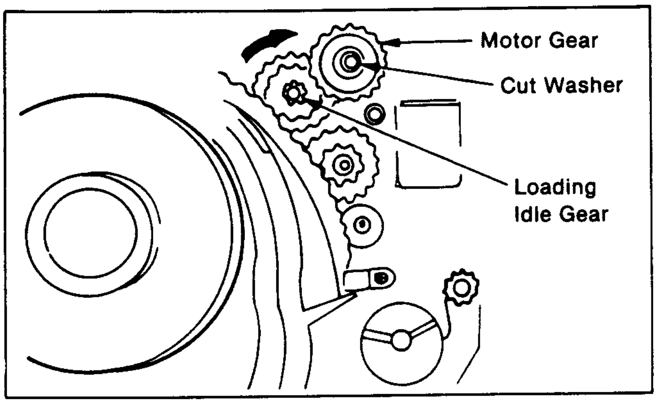

Motor Gear
Cut Washer
Loading Idle Gear

Fig. M9

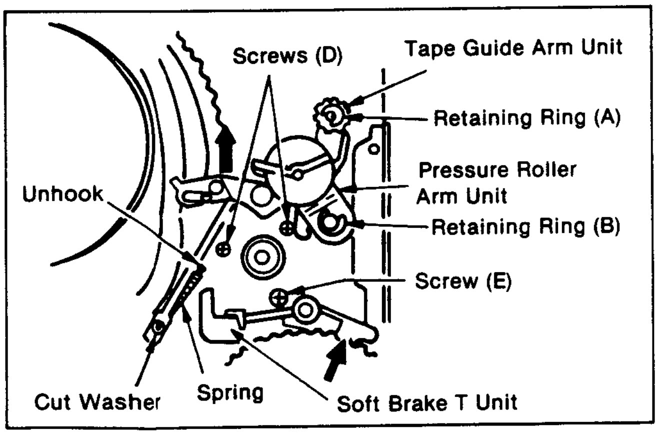

Screws (D)
Tape Guide Arm Unit
Retaining Ring (A)
Pressure Roller Arm Unit
Unhook
Retaining Ring (B)
Screw (E)
Cut Washer
Spring
Soft Brake T Unit

Fig.M10

(7) Remove Retaining Ring (A) and Tape Guide Arm Unit by pushing it in the direction shown by arrow and lifting it off its Post.
(8) Remove the Cut Washer and unhook the Spring.
(9) Remove Retaining Ring (B) and Pressure Roller Arm Unit.
(10) Refer to the Disassembly/Assembly and Adjustment Procedures of Mechanism. Use steps 3, 4 and 5 to remove the Takeup Reel Gear, Clutch Gear Unit and Soft Brake T Unit.
(11) Remove 2 Screws (D) and Screw (E) while pushing slightly on the Soft Brake T Unit.Then remove the Capstan Stator Unit from Bottom Side.
(12) Replace the new Capstan Motor Unit and then tighten 2 Screws (D) and Screw (E).

Adjustment of FG Head Gap

* Specification: .... 0.1~0.15mm
(1) Slightly loosen the 2 screws.
(2) Put the paper which is used for cover page of this volume into the gap between F.G.Head and Capstan rotor.
(3) Afer adjustment, tighten 2 screws.

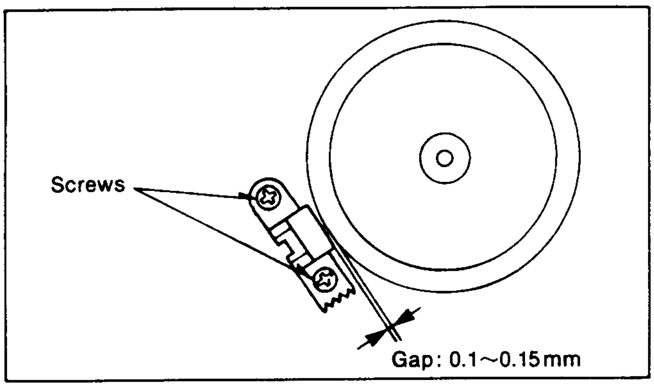

Screws
Gap: 0.1~0.15mm

Fig.M11

Note:
Do not touch the surface of rotor and keep any magnetizable material away.

2-3-3. ADJUSTMENT OF TENSION POST POSITION

(1) Remove the Cassette Up Unit.
(2) Cover the Tape End Sensor and Cassette Up/Down Sensor with Black Tape.
(3) Push the Play button to complete loading operation sequence.
(4) As soon as loading is completed, disconnect the AC plug of AC Adaptor.
(5) Loosen Screw (F) a little bit and adjust the Tension Adjust Piece (in either direction) as indicated by the arrow so that the center of the Tension Post is 1mm to the left of the center of the S1 Post as shown in Fig.M12. Tighten Screw (F) to secure it.

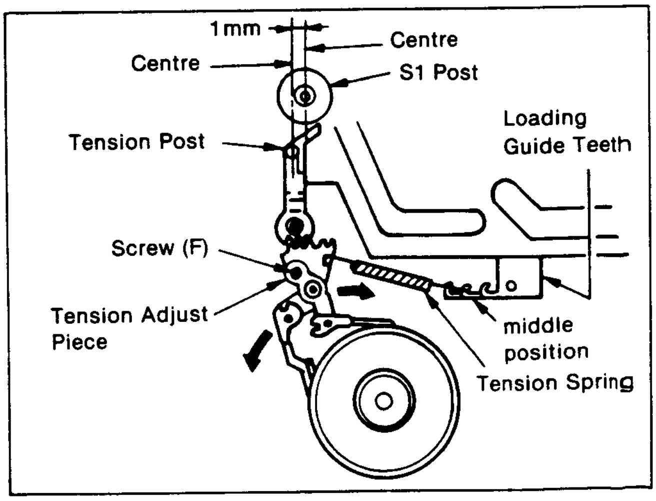

1mm
Centre
Centre
S1 Post
Tension Post
Loading Guide Teeth
Screw (F)
Tension Adjust Piece
middle position
Tension Spring

Fig. M12

Note:
After this adjustment, reposition Tension Spring on Loading Guide Teeth to middle position as a Back Tension Adjustment as shown in Fig.M12.

2-3-4. HEIGHT ADJUSTMENT OF TAPE GUIDE POST (PRELIMINARY ADJUSTMENT)

Height adjustment of S1 Post

* Specification: .... 14.72+–0.1mm

(1) For adjustment of S1 post height, turn 4mm Nut (A) slightly in either direction as necessary to the correct clearance between the upper edge of the lower tape guide on S1 Post and the lower portion of Cassette Stand S Unit.

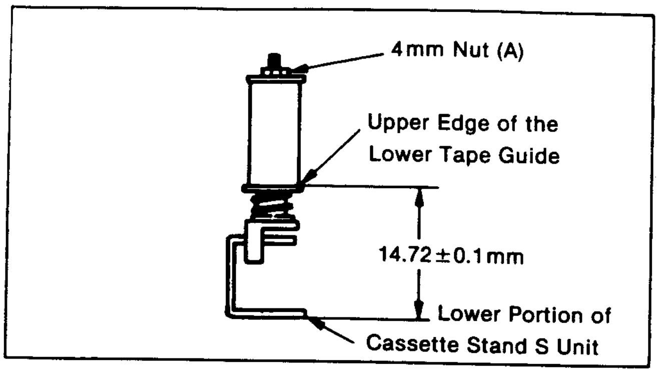

4mm Nut (A)
Upper Edge of the Lower Tape Guide
14.72±0.1mm
Lower Portion of Cassette Stand S Unit

Fig. M13

Height adjustment of S2 and T1 Posts

* Specification:
S2 Post .... 0.56+–0.1mm
T1 Post .... 0.74+–0.1mm

(1) For adjustment of S2 and T1 post height, loosen the Black Lock Screw located on the lower portion of Posts (S2 & T1) using the Lock Screwdriver .

(2) Turn top of post with Hex. Wrench (1.5mm) slightly in either direction as necessary to the correct clearance as shown in Fig.M14.

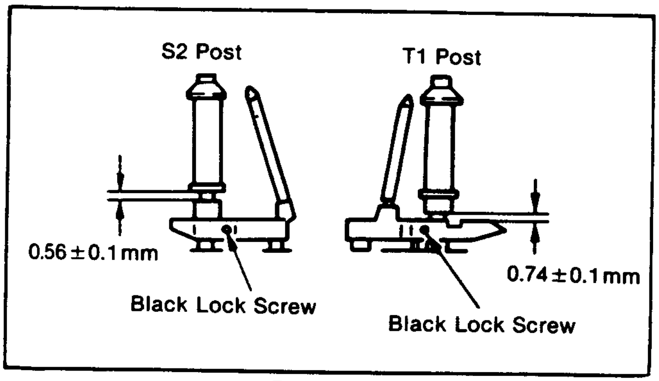

S2 Post
T1 Post
0.56±0.1mm
0.74±0.1mm
Black Lock Screw
Black Lock Screw

Fig. M14

2-3-5. TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

Note:

1) To perform these adjustment/confirmation procedures, make sure that the Tracking Control is set in the fixed (neutral) positionby pushing both of the Tracking Control Up/Down Switches, on the Main C.B.A., in at the same time.

2) Before these adjustment/confirmation procedures, remove the cassette protective Tape Cover from a Cassette Tape or the Alignment Tape 4822 397 30186

* Equipment Required:
Dual Trace Oscilloscope
Alignment Tape 4822 397 30186
Hex. Wrench (1.5mm)

1. Confirmation of Tape Travel

(1) Play back a cassette tape and confirm that the tape travels without curling at the upper and lower guides on Posts S2 and T1.

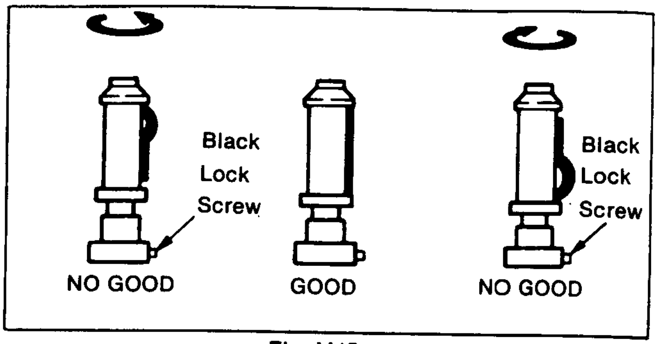

Black Lock Screw
Black Lock Screw
NO GOOD
GOOD
NO GOOD

Fig. M15

(2) If curling is apparent, adjust the height of posts by turning the top of Post with Hex. Wrench. (for S2 and T1)

Note:
Before turning S2 and T1, slightly loosen the Black Lock Screw using the Lock Screwdriver.

2. Confirmation of A/C Head

This confirmation is required when the A/C Head or Capstan Motor is replaced and for a preliminary height adjustment.
For final adjustment, perform items 3 and 4.

(1) Looking at the lower edge of the Control Head with the tape in motion, ensure that the lower edge of the tape runs 0.25mm above the lower edge of the Control Head. If it doesn't, turn Black Screw (A) slightly in either direction as necessary to correct it. Turn clockwise to lower the head and counterclockwise to raise it.

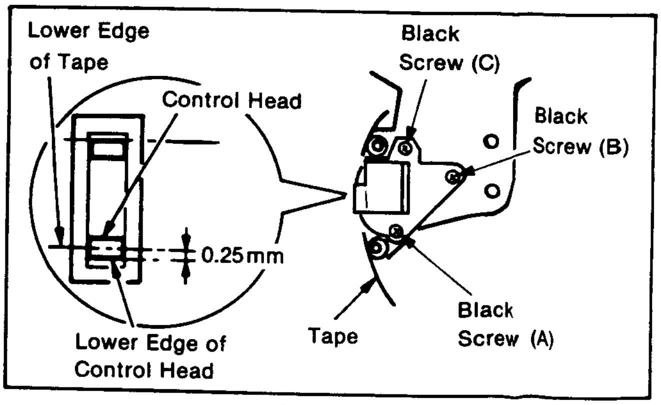

Lower Edge of Tape
Black Screw (C)
Control Head
Black Screw (B)
0.25mm
Lower Edge of Control Head
Tape
Black Screw (A)

Fig. M16

3. Confirmation of Tilt of A/C Head

(1) Play back a cassette tape and confirm that the tape runs properly between lower and upper limits of T3 Post. Also confirm that the tape is running smoothly.

(2) If adjustment is required, turn Black Screw (B), in Fig.M16, counterclockwise until curing is appearmentat lower edge of T3 Post.
Then turn Black screw (B) clockwise until the curling smoothes.

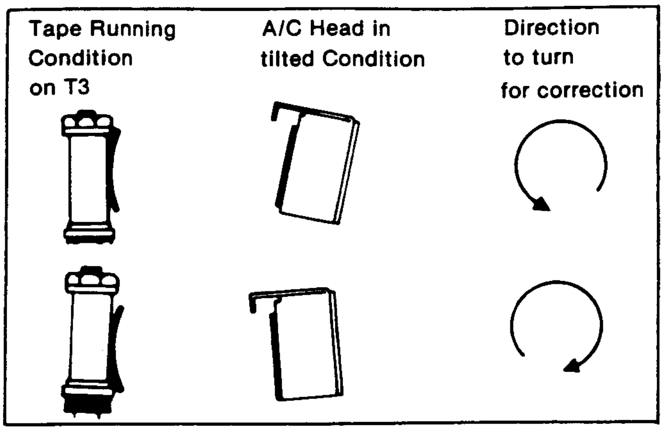

Tape Running Condition on T3
A/C Head in tilted Condition
Direction to turn for correction

Fig. M17

4. Height and Azimuth Adjustment of A/C Head

(1) Connect the oscilloscope to TP4001 on the Main C.B.A.

(2) Play back the Monoscope portion (6KHz, Mono) of the Alignment Tape.

(3) Adjust Black screw (C) on the A/C Head Base in Fig.M16 so that the output level is at a maximum.

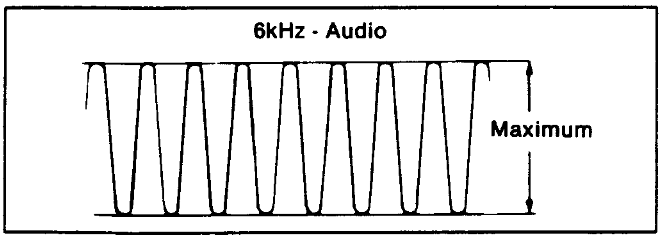


Fig. M18

(4) Readjust Block screw (A) shown in Fig.M16 for maximum output.

(5) Disconnect the oscilloscope.

5. Horizontal Position Adjustment of A/C Head

(1) Set the tracking control to the fixed (neutral) position by pushing both of the tracking control Up/Down Switches, on the Main C.B.A., in at the same time. Connect the oscilloscope to TP3501 on the Main C.B.A. Use TP2001 as a trigger.

(2) Play back the monoscope portion of the Alignment Tape and confirm that RF envelope appears,as in Fig.M20.

(3) If adjustment is reqired, slowly move the A/C Head Base back and forth using a screwdriver by turning screw (D) so that the envelop is at a maximum.

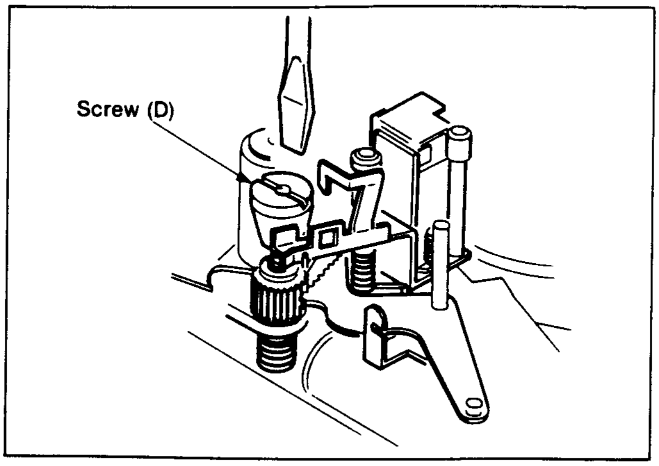


Fig. M19

(4) Confirmation of the correct adjustment can be made by alternately pushing the Tracking Control Up/Down Switches, on the Main C.B.A. to check the symmetry of the envelope.

(5) Reconfirm the symmetry of the envelope. If it has cahnged, repeat step (3) and (4) .

6. Confirmation/Adjustment of Envelope Output

(1) Set the tracking control to the fixed (neutral) position by pushing both of the tracking control Up/Down Switches, on the Main C.B.A., in at the same time. Connect the oscilloscope to TP3501 on the Main C.B.A. Use TP2001 as a trigger.

(2) Playback the Monoscope portion of the Alignment Tape and adjust the height of posts S2 and T1 watching the scope display so that the envelope becomes as flat as possible.
(V1/V-max >= 0.7, V2/V-max >= 0.8)
If adjustment is required, turn top of post with Hex. Wrench (1.5mm). For adjustment of S2 and T1, refer to Item 1 and it's Note.

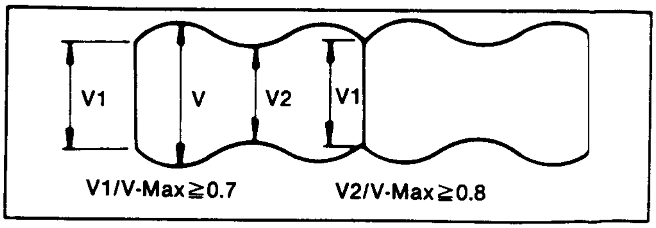


Fig. M20

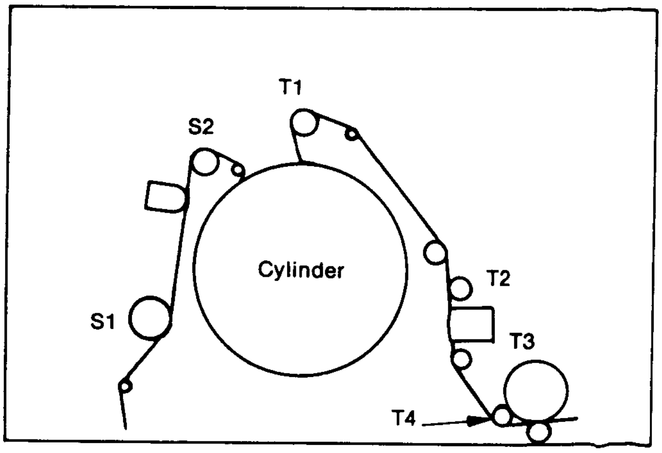


Fig. M21

(3) When the scope display is as shown in Fig.M22, ajust the height of S2 so that the waveform looks like Fig.M24.

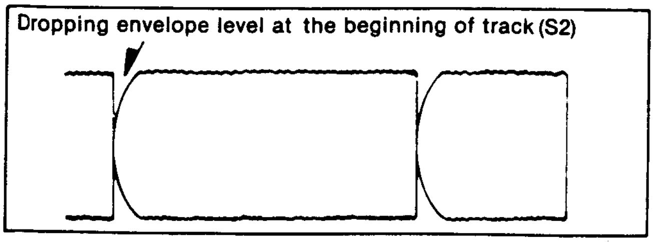

Dropping envelope level at the beginning of track (S2)

Fig. M22

(4) When the scope display is as shown in Fig.M23, adjust the height of T1 so that the waveform looks like Fig.M24.

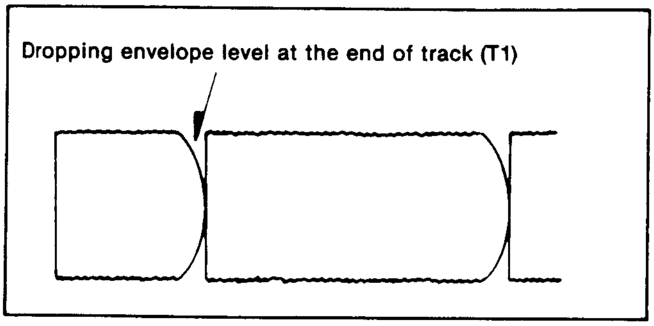

Dropping envelope level at the end of track (T1)

Fig. M23

(5) The scope display should appear as shown in Fig. M24 when S2 and T1 Posts are ajusted properly.

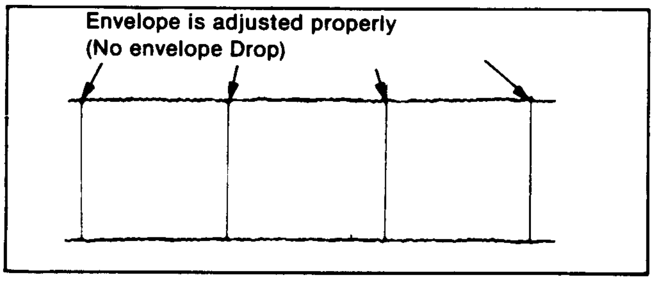

Envelope is adjusted properly
(No envelope Drop)

Fig. M24

Note:

1) Upon completion of adjustment of S2 and T1, tighten the Black Lock Screw on S2 and T1 using Lock Screwdriver. Then confirm the Horizontal Position of A/C Head by pushing the Tracking Control Up or Down switches on the Main C.B.A. alternately to check the symmetry of the envelope. And if required, perform "Horizontal Position Adjustment of A/C Head".
2) After these adjustment/confirmation procedures, replace the cassette protective Tape Cover.

2-3-6. ASSEMBLY AND ADJUSTMENT PROCEDURE OF MECHANISM

This procedure starts with the condition that the Cabinet parts and Cassette Up Unit have been removed.
When re-assembling, perform the step (s) in the reverse order.

STEP/ LOC No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE ★ UNHOOK/UNLOCK/ RELEASE	ADJUSTMENT # CONDITION * REMARKS
①	1	RT (S) UNIT D.D. CYL. UNIT	T/ B	M27, 28	3 (S-0) ★ Connectors	★ Remove the Earth Plate before Step ①
②	3	TAKEUP REEL GEAR	T	M26, 28	(C-1), (W-1) <Note 1>	(+)
③	3	CLUTCH GEAR UNIT	T	M26, 28	(C-2), (W-2) <Note 1>	(+)
④	4	SOFT BRAKE T UNIT	T	M26, 28	(C-3), ★ (P-1) <Note 1>	(+)
⑤	6	HEAD AMP ANGLE	T	M29	2 (S-2), (S-3) ★ Connector	★ Remove the Head amp Unit before Step ⑤.
⑥	6	MODE SELECT SWITCH UNIT	T	M26, 29	(S-3) ★ Connector	Align the Punch Mark with the Notch. # STOP MODE
⑦	6	TAPE GUIDE LEVER UNIT	T	M26, 29	(C-4), ★ (P-2) <Note 1>	See, Hooking Position.
⑧	7	IDLER GEAR	T	M26, 30	…………………………	(+) Align the Notch with the Shaft of Loading Idle Gear. # STOP MODE
⑨	8	SECTOR GEAR UNIT	T	M26, 30	(C-5)	(+) Align the Hole with the Notch. # STOP MODE
⑩	9	A/C HEAD & BASE UNIT	T	M26, 30	4 (N-1) for removal of A/C HEAD	<Note 2>
⑪	10	MOTOR GEAR	T	M26, 31	(C-5) <Note 1>	(+) # STOP MODE (Fig. M31)
⑫	11, 10	LOADING MOTOR UNIT	T	M31	2 (S-5)	<Note 2>
⑬	10	TAPE GUIDE LEVER UNIT	T	M26, 31	(R-1), ★ (P-3)	See, Hooking Position.
⑭	14	TENSION ARM UNIT	T	M26, 32	(C-7), (W-3) <Note 1>	(+) See, Adjustment of Tension Post Position. Align the Punch Mark with the Notch. # Loading
⑮	15	SUPPLY REEL TABLE UNIT	T	M26, 32	(C-8), (W-4) <Note 1>	(+)
⑯	15	TENSION BAND ARM UNIT	T	M26, 32	(C-9), ★ (P-4) <Note 1>	(+)
⑰	16, 14	CASSETTE STAND S ASS'Y	T	M26, 33	2 (S-6), ★ Connector	(+) <Note 2>

Fig. M25-1

STEP/ LOC No.	START- ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE * UNHOOK/UNLOCK/ RELEASE	ADJUSTMENT #CONDITION *REMARKS
⑱	18	SHIELD COVER	B	M27	(S-7)	
⑲	18, 11, 10, 2	LOADING GUIDE ASS'Y	T	M26, 34	6(S-8), * (L-1), * Connector	(+) <Note 2> <Note 3> # Loading
⑳	19	TAKEUP SHAFT HOLDER ASS'Y	T	M26	(C-10)	(+) <Note 1>
㉑	19	SUPPLY SHAFT HOLDER ASS'Y	T	M26	………………………………	(+)
㉒	19	V STOPPER BASE ASS'Y	T	M26	2 (S-9)	
㉓	19, 13	PRESSURE ROLLER ARM UNIT	T	M26, 35	(R-2), (C-11), * (P-5), <Note 1>	(+) See, Hooking Condition.
㉔	23, 5	CAPSTAN MOTOR UNIT	T	M26, 27, 35	* Capstan Belt, 3 (S-10), * Connector	<Note 2> See, Replacement of Capstan Motor Unit.
㉕	4	CASSETTE STAND-T	T	M26, 35	2(S-11)	(+) <Note 2>
㉖	19	RING GUIDE 1	T	M36	(S-12)	See, setting condition.
㉗	19	RING GUIDE 3	T	M36	(S-13)	See, setting condition.
㉘	27, 26, 21, 20	LOADING RING S UNIT	T	M26, 36	………………………………	(+) Align the Hole with punch Mark.
㉙	28	LOADING DRIVE GEAR-T	T	M36	(C-12) <Note 1>	(+)
㉚	28	RING GUIDE GEAR-S (2 USED)	T	M36	………………………………	……………………………… White Colour Gear
㉛	31	RING LIMITER	T	M26, 37	(S-14)	
㉜	28	LOADING RING T UNIT	T	M36, 37	………………………………	See, setting Condition. Align the Punch Mark with the Notch.
㉝	31	LOADING IDLE GEAR	T	M26, 37	………………………………	(+) Align the Punch Mark with the Notch.
㉞	32, 28, 19	RING GUIDE GEAR-T (2 USED)	T	M37	………………………………	(+) Black Color Gear # STOP MODE
㉟	10	LOADING DRIVE GEAR-S	T	M36, 37	(C-13) <Note 1>	(+)
㊱	33, 32, 30, 28	RING GUIDE-2	T	M36, 37	(S-15)	
㊲	32, 28, 22, 19, 17	LOADING GUIDE-S UNIT	T	M38	3(S-16)	<Note 2>

List of Abbreviations:
T=Top, B=Bottom,
(R-1)=Retaining Ring (R-1); (P-1)=Spring (P-1); (S-1)=Screw (S-1);
(W-1)=Washer (W-1); 2(S-2)=2 Screws (S-2); (C-1)=Cut Washer (C-1):
(L-1)=Locking Tab (L-1)
(N-1)=Nut (N-1)
(+)=Refer to Exploded Views for Lubrication information

Fig. M25-2

TOP VIEW

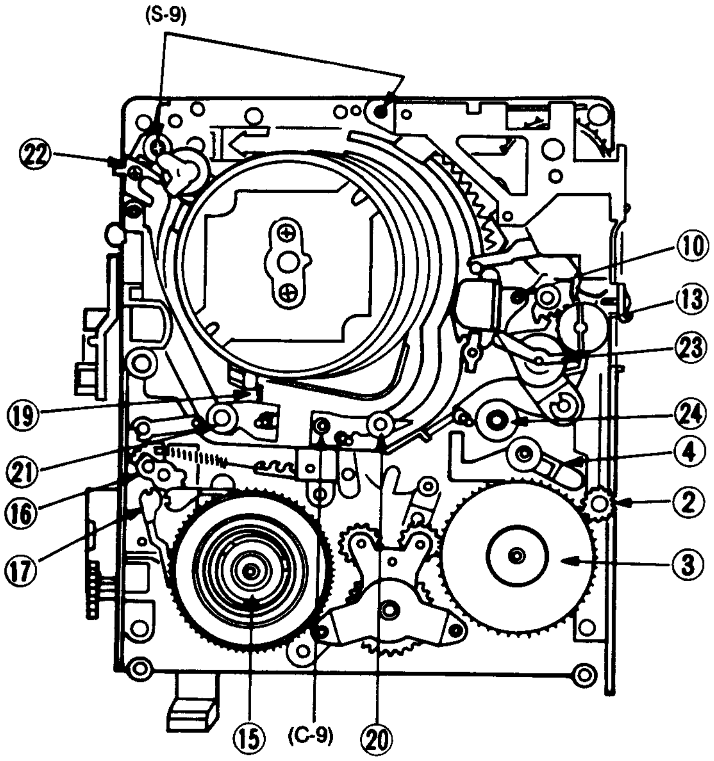

(S-9)
㉒
⑩
⑬
㉓
⑲
㉔
㉑
④
⑯
②
⑰
③
⑮
(C-9)
⑳

Fig. M26

BOTTOM VIEW

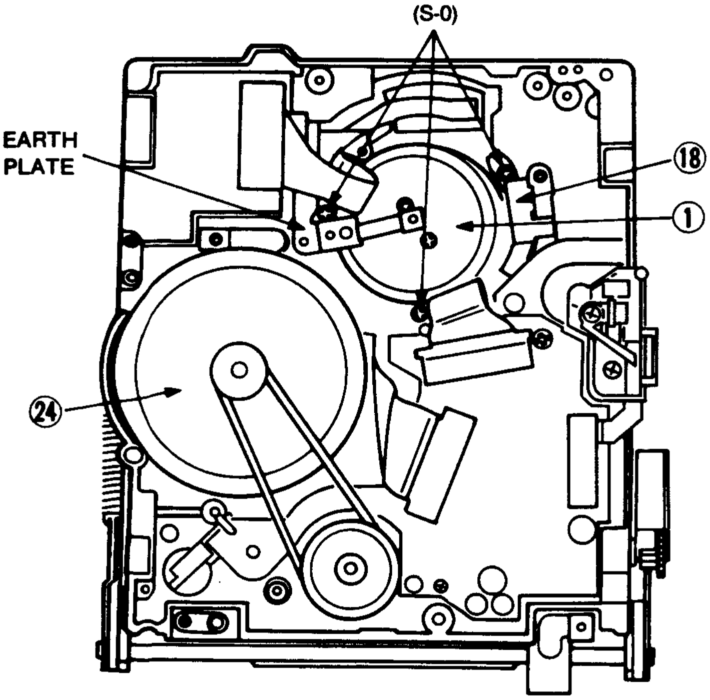

(S-0)
EARTH PLATE
⑱
①
㉔

Fig. M27

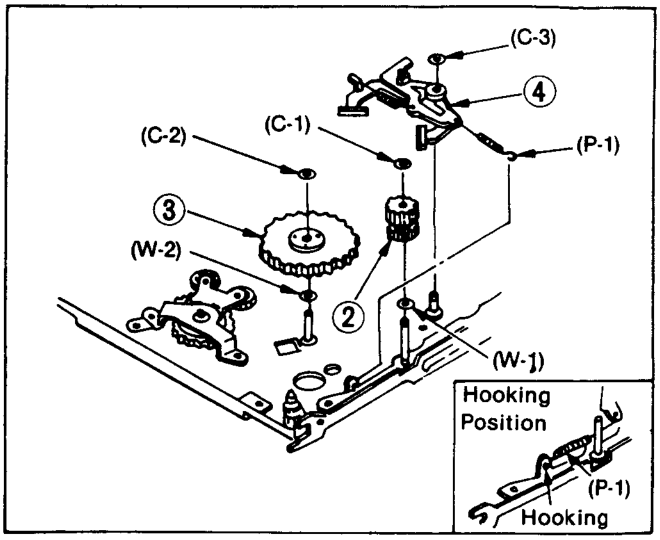

(C-3)
④
(C-2)
(C-1)
(P-1)
③
(W-2)
②
(W-1)
Hooking Position
(P-1)
Hooking

Fig. M28

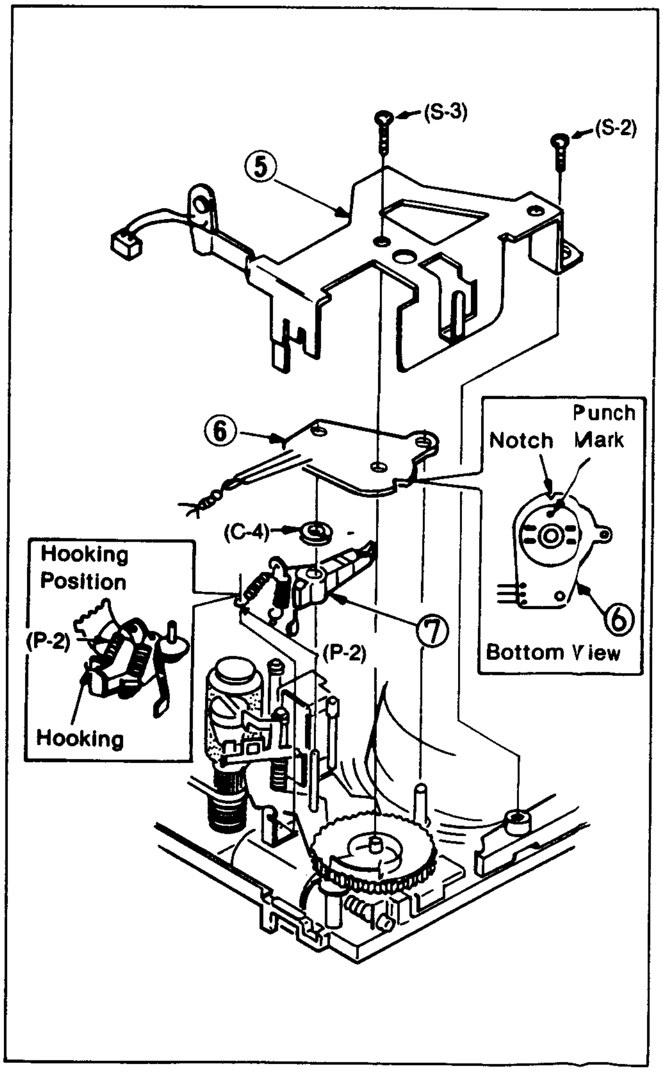

(S-3)
(S-2)
⑤
⑥
Punch Mark
Notch
(C-4)
Hooking Position
⑦
(P-2)
(P-2)
⑥
Bottom View
Hooking

Fig. M29

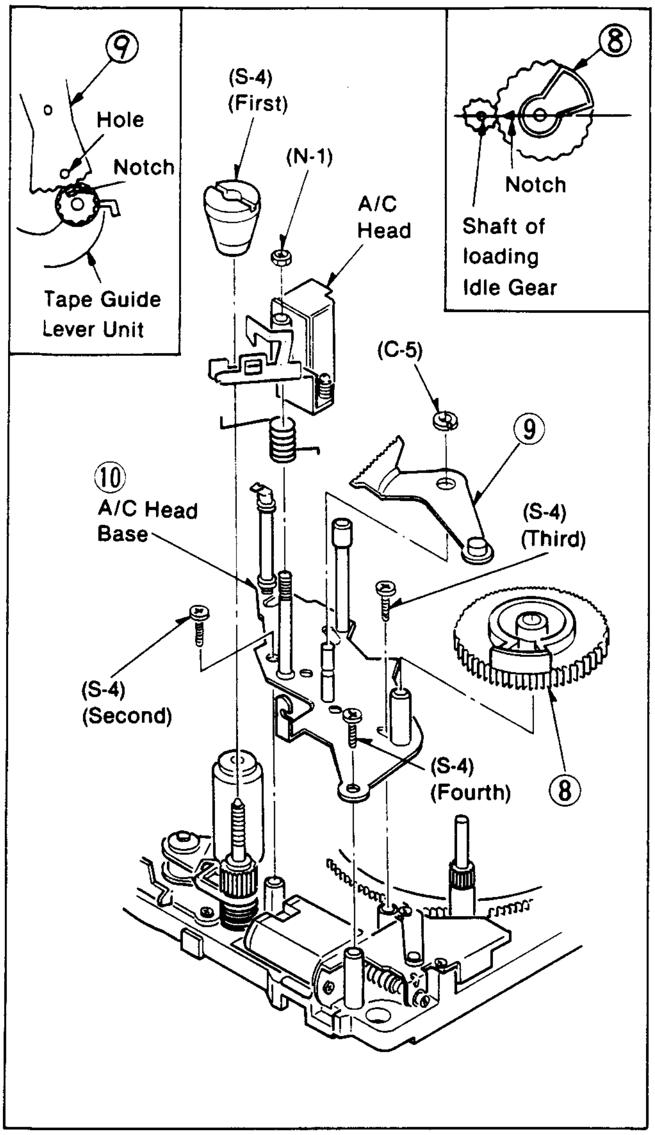

⑨
Hole
Notch
Tape Guide
Lever Unit
(S-4)
(First)
(N-1)
A/C
Head
⑧
Notch
Shaft of
loading
Idle Gear
(C-5)
⑨
⑩
A/C Head
Base
(S-4)
(Third)
(S-4)
(Second)
(S-4)
(Fourth)
⑧

Fig. M30

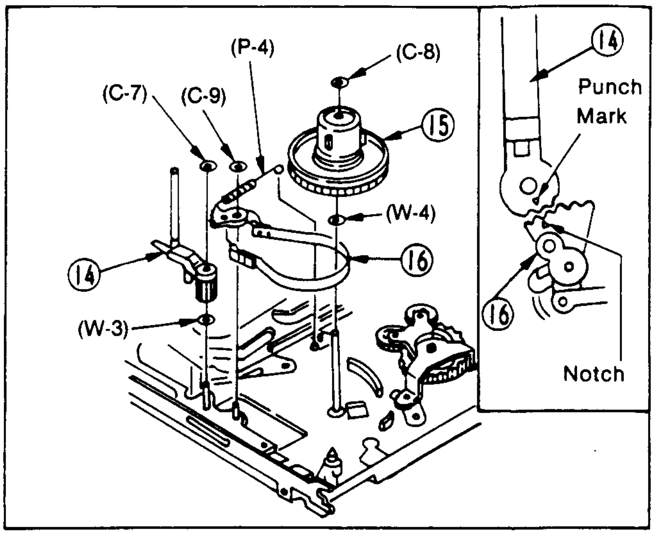

(P-4)
(C-8)
(C-7)
(C-9)
⑮
(W-4)
⑯
⑭
(W-3)
⑭
Punch
Mark
⑯
Notch

Fig. M32

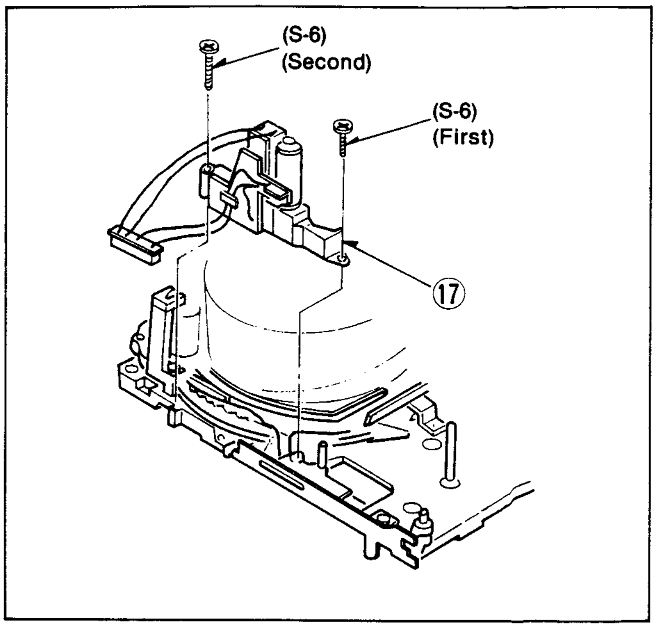
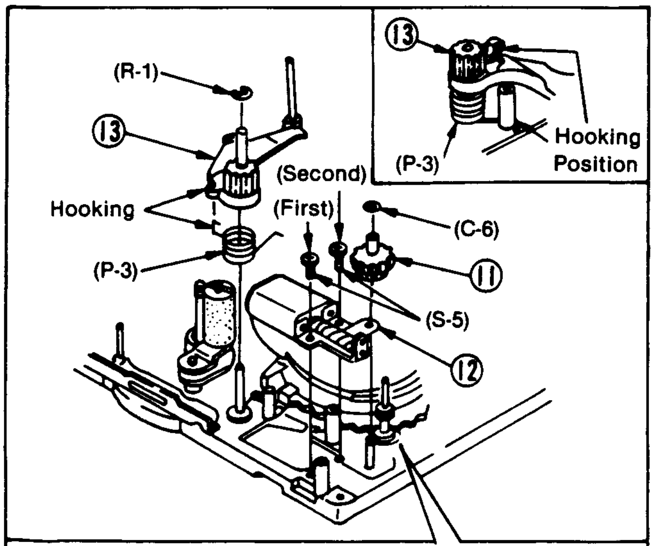

(S-6)
(Second)
(S-6)
(First)
⑰

Fig. M33


(R-1)
⑬
Hooking
(P-3)
(Second)
(First)
(C-6)
⑪
(S-5)
⑫
⑬
(P-3)
Hooking
Position

Align the hole of Gear with the hole in chassis.

▨ Loading Drive Gear S

▧ Chassis

Fig. M31

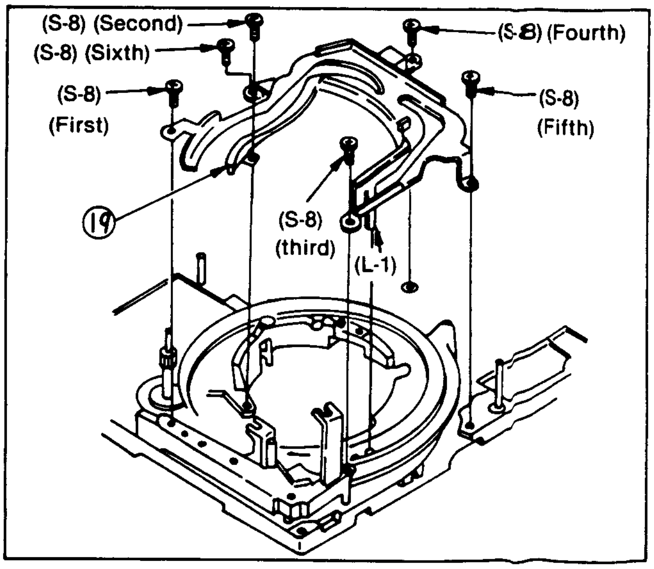

(S-8) (Second)
(S-8) (Sixth)
(S-8)
(First)
(S-8) (Fourth)
(S-8)
(Fifth)
⑲
(S-8)
(third)
(L-1)

Fig. M34

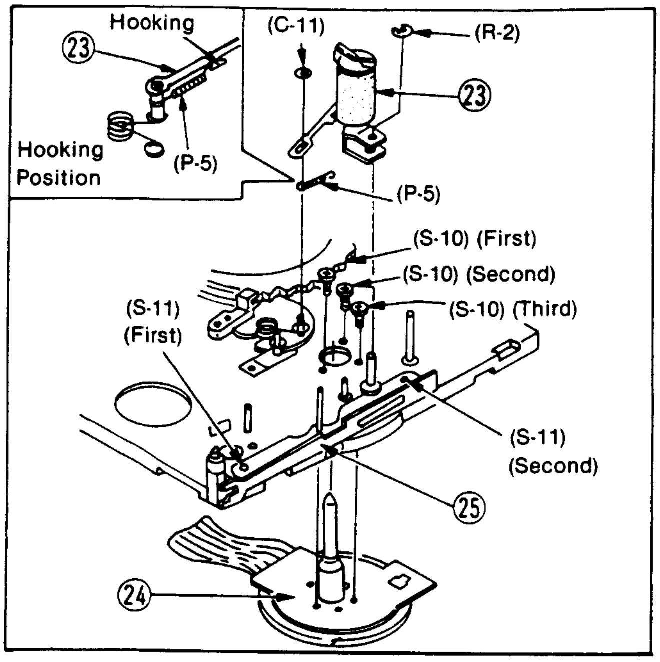

Hooking
㉓
Hooking Position
(P-5)
(C-11)
(R-2)
㉓
(P-5)
(S-10) (First)
(S-10) (Second)
(S-10) (Third)
(S-11) (First)
(S-11) (Second)
㉕
㉔

Fig. M35

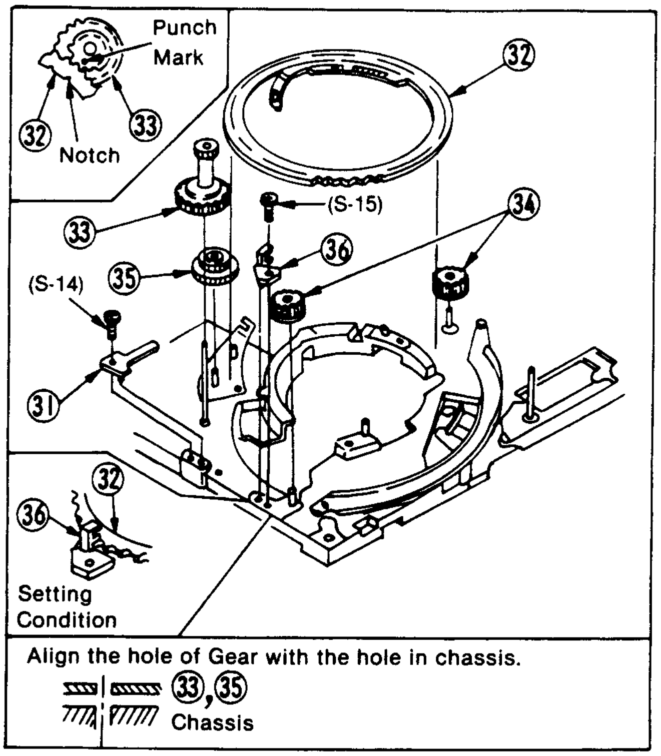

Punch Mark
㉜
㉝
Notch
㉜
(S-15)
㉞
㉝
㊱
(S-14)
㉟
㉛
㉜
㊱
Setting Condition
Align the hole of Gear with the hole in chassis.
㉝,㉟
Chassis

Fig. M37

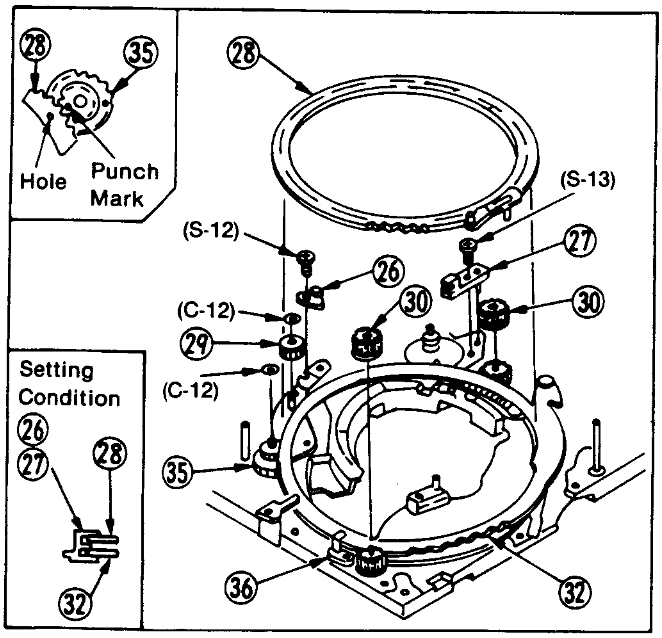

㉘
㉟
Hole
Punch Mark
㉘
(S-13)
(S-12)
㉖
㉗
(C-12)
㉚
㉚
㉙
(C-12)
Setting Condition
㉖
㉗
㉘
㉜
㉟
㊱
㉜

Fig. M36

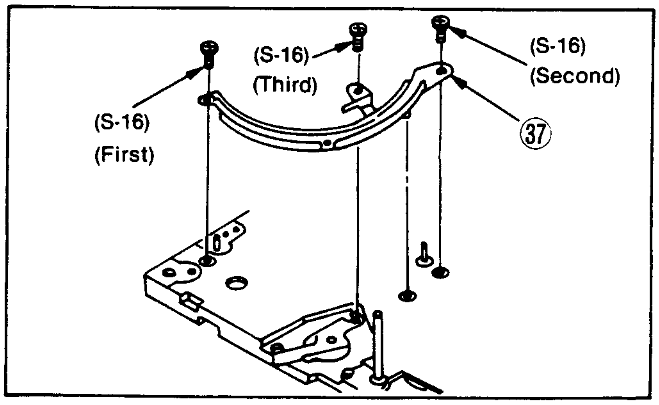

(S-16) (Third)
(S-16) (Second)
(S-16) (First)
㊲

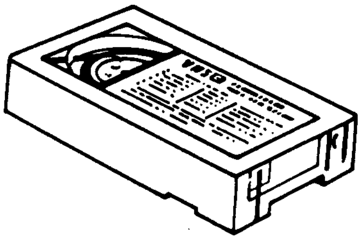
Fig. M38

Reference's <Notes> in Table 7 :

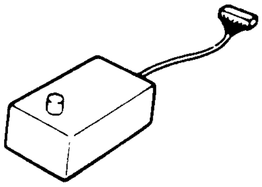
1. This Cut Washer is not reusable. If removed, install a new one.
2. In each figure, tighten the screws in the order indicated in the diagram.
3. Remove the shield cover over the PG Pickup to allow the release of (L–1).

Service Fixtures & Tools

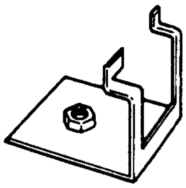
4822 397 30186 **VHS-C Alignment Tape**



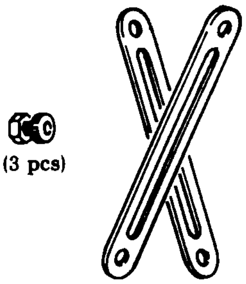
4822 395 90255 **Y/C Separator**



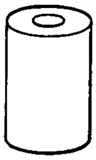
4822 395 90566 **CAMERA HOLDER**



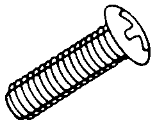
4822 432 60215 **Camera Holder Arm**



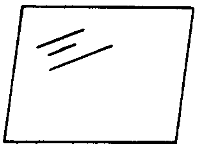
4822 256 91287 **Holder Spacer**



4822 502 13254 **Screw**

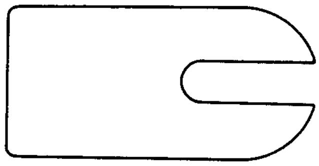


4822 397 60152 (C12)
4822 397 60153 (C2)
4822 397 60154 (C8)

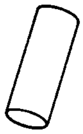


Colour Temperature Conversion Filter

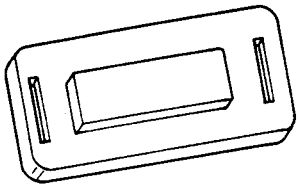
4822 532 40195 **Clearance Spacer**



4822 395 50386 **Alignment Shaft**



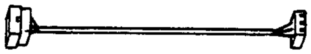
4822 466 70675 **Diffusion Plate**



Extension Cables

Camera Section

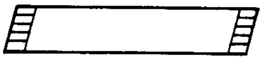
4822 321 60378 **Extension Cable (3P)**



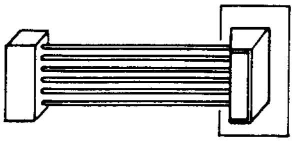
4822 321 60379 **Extension Cable (6P)**

4822 321 60381 **Extension Cable (14P)**

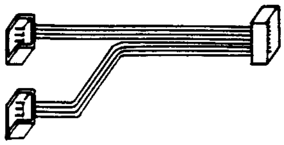
4822 321 60384 **Extension Cable (5P)**



4822 395 30279 **Extension Cable (18P)**

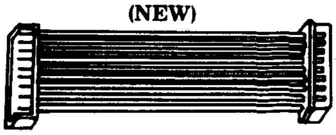


4822 321 60382 **Extension Cable (6P)**

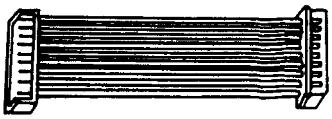


VTR Section

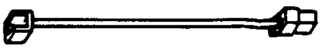
4822 321 60385 **Extension Cable (26P)**
(NEW)



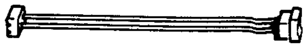
4822 321 23178 **Extension Cable (20P)**



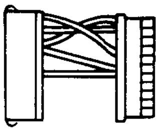
4822 321 22747 **Extension Cable (2P)**



4822 321 60383 **Extension Cable (3P)**



4822 321 23181 **Connector**



2-4. ELECTRICAL ADJUSTMENT PROCEDURES

2-4-1. ELECTRICAL ADJUSTMENT FOR CAMERA SECTION

TEST EQUIPMENT AND TOOLS

The following equipment is required for adjustment of the CAMERA section.

1. Oscilloscope
   Dual Trace, 50MHz, 2mV/DIV,
   10 : 1 Probe
   1 : 1 Probe
2. Digital Volt Meter or VTVM
3. Frequency Counter
4. Vectorscope
5. Light Meter
6. Tripod
7. Colour Video Monitor
8. Lighting
   140 foot-candles (1400lux), on the chart surface 3200 degrees K.
9. Reflection Chart
   - *Logarithmic Gray Scale Chart (Part No. : 4822 397 30217)
   - *Colour Chip Chart (Part No. : 4822 397 30216)
   - *Ball Chart (Part No. : 4822 397 30218)
   - *Hunting Chart (Part No. : 4822 397 30209)
   - *White Chart (Card) (Part No. : 4822 397 30209)
   - *J Chart (Part No. : 4822 397 30218)
   - *B/W Chart (Part No. : 4822 397 30209)
   - *Gray-White Chart (Part No. : 4822 397 30209)
   - *Colour Bar Chart (Part No. : 4822 397 30215)
10. Plastic Tip Driver
11. Camera Unit Holder
    (Part No. : 4822 395 90566)
12. Camera Holder Arm
    (Part No. : 4822 432 60215)

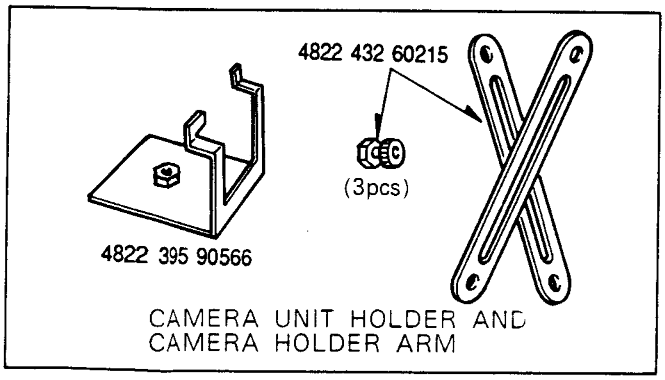

4822 432 60215
(3pcs)
4822 395 90566
CAMERA UNIT HOLDER AND
CAMERA HOLDER ARM

Fig.C1

13. Colour temperature conversion filter
    *C12 Filter Part NO. : 4822 397 60152
    *C2 Filter Part NO. : 4822 397 60153
    *C8 Filter Part NO. : 4822 397 60154
14. Camera Extension Cables
    *Extension Cable(3P) (Part No.: 4822 321 60378
    *Extension Cable(6P) (Part No.: 4822 321 60379
    *Extension Cable(14P) (Part No.: 4822 321 22748
    *Extension Cable(5P) (Part No.: 4822 321 60384
    *Extension Cable(18P) (Part No.: 4822 395 30279
    *Extension Cable(6P) (Part No.: 4822 321 60382

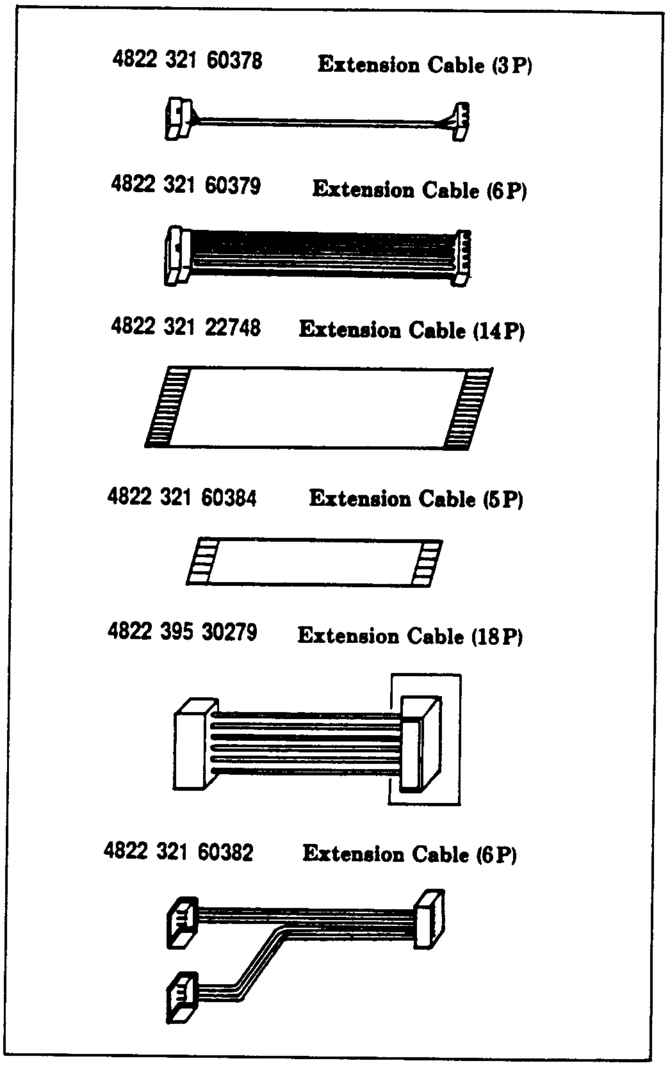

4822 321 60378 Extension Cable (3P)
4822 321 60379 Extension Cable (6P)
4822 321 22748 Extension Cable (14P)
4822 321 60384 Extension Cable (5P)
4822 395 30279 Extension Cable (18P)
4822 321 60382 Extension Cable (6P)

Fig.C2

PREPARATION

1). Remove the Side Case (L) and Side Case (R) from the Unit.
    (Refer to the Disassembly Section.)
2). Mount the Camera Unit on the tripod using the Camera Unit Holder 4822 395 90566 and Camera Holder Arm 4822 432 60215
3). Connect the Camera Unit, Video Recorder Unit, AC Adaptor, Camera Operation Unit and Colour Monitor TV as shown in Fig. C3.
4). Remove the flexible Cable (Which is connected between FP306 and P3504).
5). Connect the Extension cable 4822 321 22748 between FP306 and P3504.
6). Set the camera unit to tripod using camera holder 4822 395 90566 and camera holder arm 4822 432 60215 (refer to Technical Information).

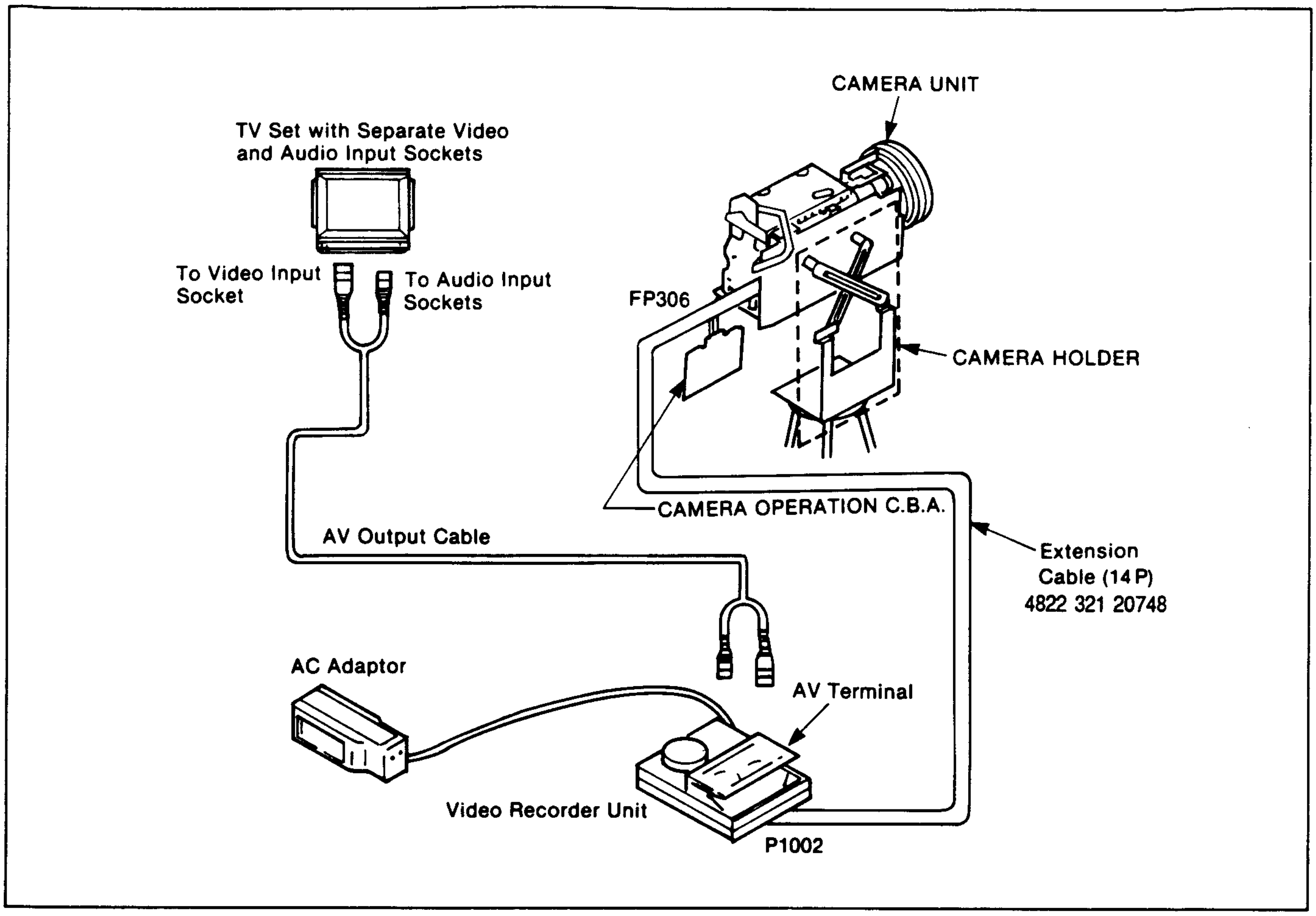

CAMERA UNIT
TV Set with Separate Video and Audio Input Sockets
To Video Input Socket
To Audio Input Sockets
FP306
CAMERA HOLDER
CAMERA OPERATION C.B.A.
AV Output Cable
Extension Cable (14 P) 4822 321 20748
AC Adaptor
AV Terminal
Video Recorder Unit
P1002

Fig.C3

Note:

<STANDARD SETTING FOR CAMERA ADJUSTMENT>

If there is no switch setting indication in adjustment procedures, set the camera switch as follows :

1) White Balance Switch --- Inddor
   Auto Focus -------------- OFF
   High Speed Shutter ----- OFF
2) For trigger oscilloscope, use video output terminal FP306-7.
3) Use 3200 degrees Kelvin light source to light.
4) Service work for camera unit must be performed in a dust free loction to maintain lens cleanliness.

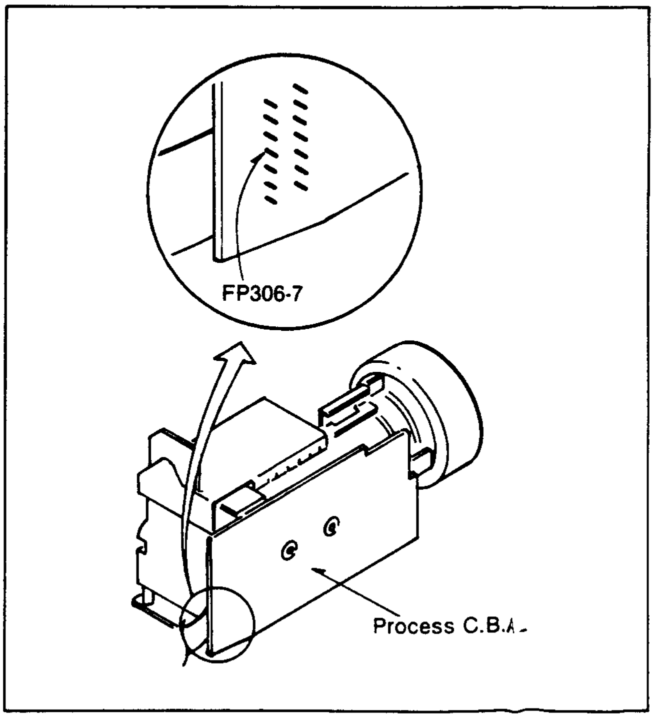

FP306-7
Process C.B.A.

Fig. C4-1

HOW TO USE CAMERA HOLDER ARM 4822 432 60215

This Camera Holder Arm which is adjustable the span must be mounted 4822 395 90566 and it can be used with 4822 256 91287 camera adjustment or checking.

(A) ---- 4822 256 91287 Holder Spacer (2pcs.)
(B) ---- 4822 432 60215 Camera Holder Arm
(C) ---- 4822 502 13254 Screw (2pcs.)
(D) ---- 4822 395 90566 Camera Holder

(1) Fix the Holder Arm (4) and (5) temporarily by screw (1) as shown in Fig. C4-2.
(2) Mount the Camera Holder Arm (B) to the Camera Holder (D) by screws (2) and (3) as shown in Fig. C4-3.
(3) Tighten the screws (C) with the Holder Spacers (A) as shown in Fig. C4-2.

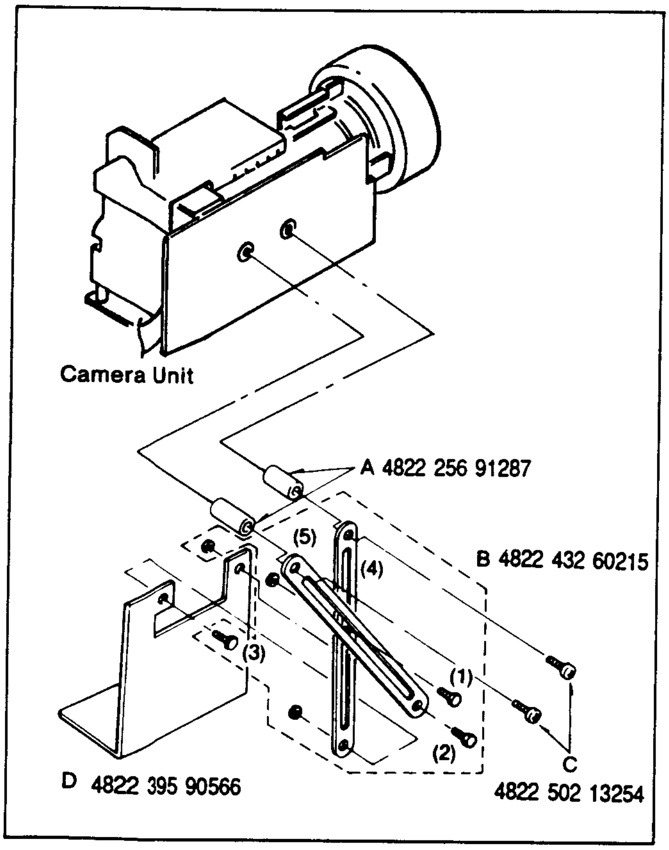

Camera Unit
A 4822 256 91287
(5)
(4)
B 4822 432 60215
(3)
(1)
(2)
C
D 4822 395 90566
4822 502 13254

Fig. C4-2

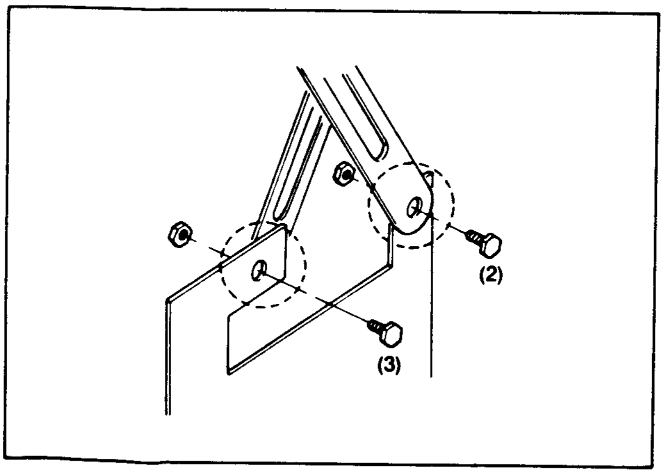
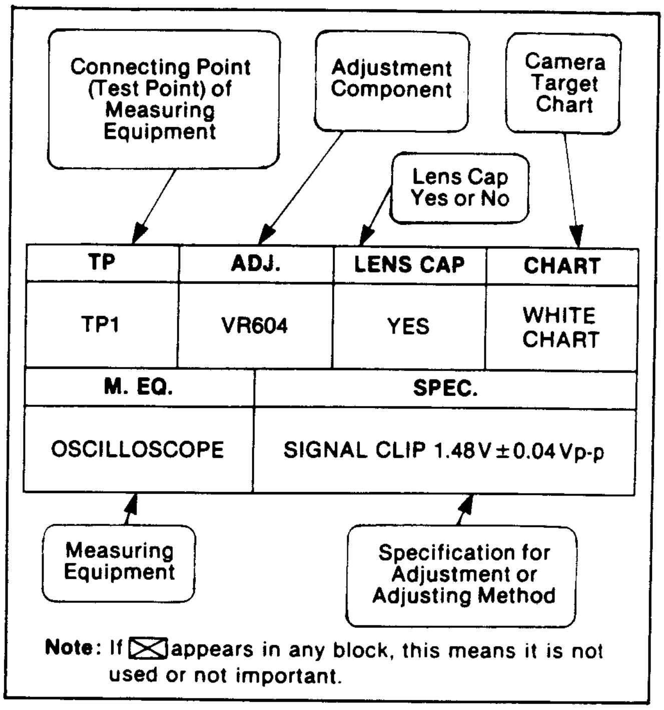


Fig. C4-3

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Adjustment Component
Camera Target Chart
Lens Cap Yes or No
Measuring Equipment
Specification for Adjustment or Adjusting Method

TP	ADJ.	LENS CAP	CHART
TP1	VR604	YES	WHITE CHART

M. EQ.	SPEC.
OSCILLOSCOPE	SIGNAL CLIP 1.48V±0.04Vp-p

Note: If ☒ appears in any block, this means it is not used or not important.

Fig. C5-1

CCD DRIVE SECTION

1. BACK FOCUS ADJUSTMENT
2. PLL FREQUENCY ADJUSTMENT
3. V-SUB ADJUSTMENT
4. CCD OUTPUT ADJUSTMENT

PROCESS SECTION

5. ALC ADJUSTMENT
6. AGC ADJUSTMENT
7. PEDESTAL LEVEL ADJUSTMENT
8. Y 1H/2H DELAY LEVEL ADJUSTMENT
9. YH LEVEL ADJUSTMENT
10. COLOUR BURST AND R-Y/B-Y GAIN:VEL ADJUSTMENT

Ⓐ

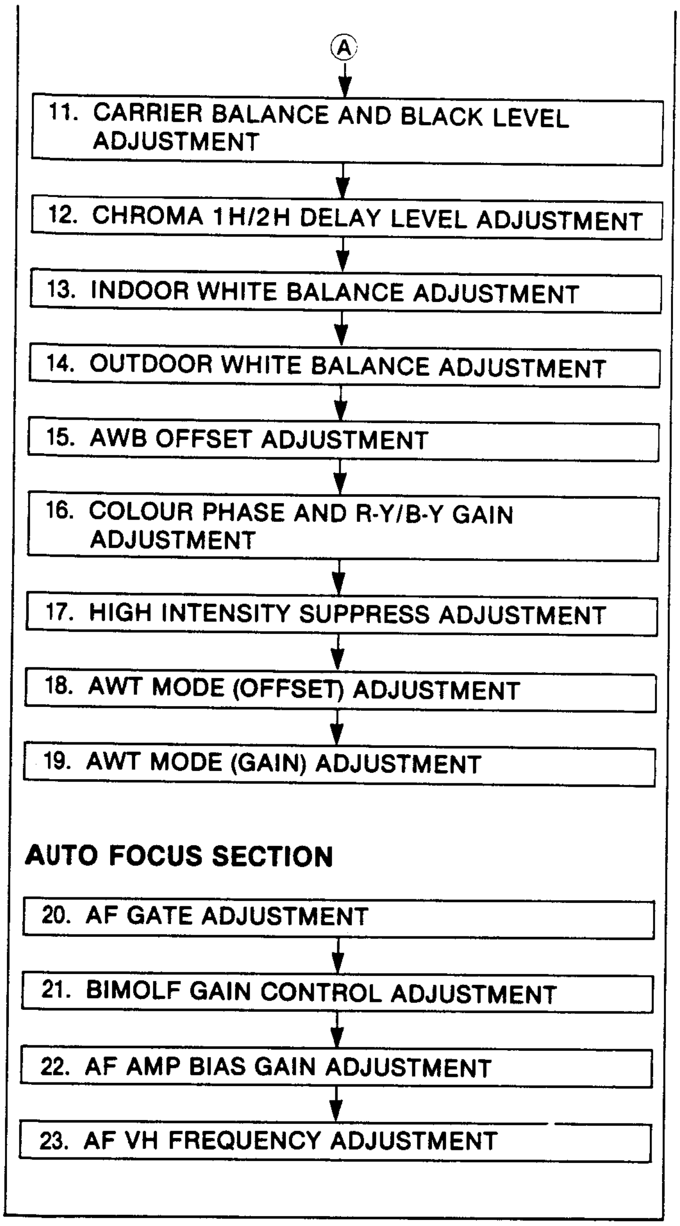

Ⓐ
11. CARRIER BALANCE AND BLACK LEVEL ADJUSTMENT
12. CHROMA 1H/2H DELAY LEVEL ADJUSTMENT
13. INDOOR WHITE BALANCE ADJUSTMENT
14. OUTDOOR WHITE BALANCE ADJUSTMENT
15. AWB OFFSET ADJUSTMENT
16. COLOUR PHASE AND R-Y/B-Y GAIN ADJUSTMENT
17. HIGH INTENSITY SUPPRESS ADJUSTMENT
18. AWT MODE (OFFSET) ADJUSTMENT
19. AWT MODE (GAIN) ADJUSTMENT
AUTO FOCUS SECTION
20. AF GATE ADJUSTMENT
21. BIMOLF GAIN CONTROL ADJUSTMENT
22. AF AMP BIAS GAIN ADJUSTMENT
23. AF VH FREQUENCY ADJUSTMENT

Fig. C5–2

CCD DRIVE SECTION

1. BACK FOCUS ADJUSTMENT

(1) Aim the Camera at the Hunting Chart 3m distance and zoom all the way in (Fully tele position.)
(2) Focus the lens on the object.
(3) Confirm that Focus–ring indicates 3m.
(4) Adjust the relay lens adjustment point as shown in Fig. C6.

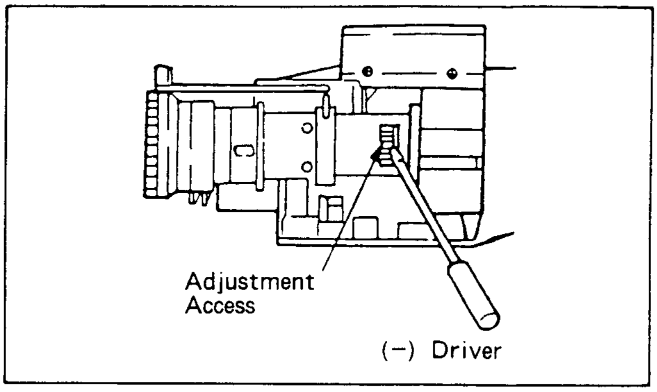

Adjustment Access
(–) Driver

Fig.C6

(5) Zoom all the way back and adjust the back focus pitch so that the sharpest focus is obtained.
(6) Repeat the procedure as follows, zoom in, focus, zoom out and adjust until the best focus is obtained over the entire Zoom range.

2. PLL FREQUENCY ADJUSTMENT

(1) Remove the Sensor Shield Case by removing its 2 Screw.

TP	ADJ.	LENS CAP	CHART
PIN 7 OF B201	C206	╳	╳
M. EQ.		**SPEC.**	
FREQUENCY COUNTER		9.656250Mhz +– 10Hz	

Note:
B201, C292 : Sensor C.B.A.

3. V-SUB ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
╳	VR201	NO	HALOGEN LAMP
M. EQ.		**SPEC.**	
MONITOR TV		NO BLOOMING	

(1) Zoom all the way in (Fully tele position) and aim the camera at the Halogen Lamp as shown in Fig.C7.

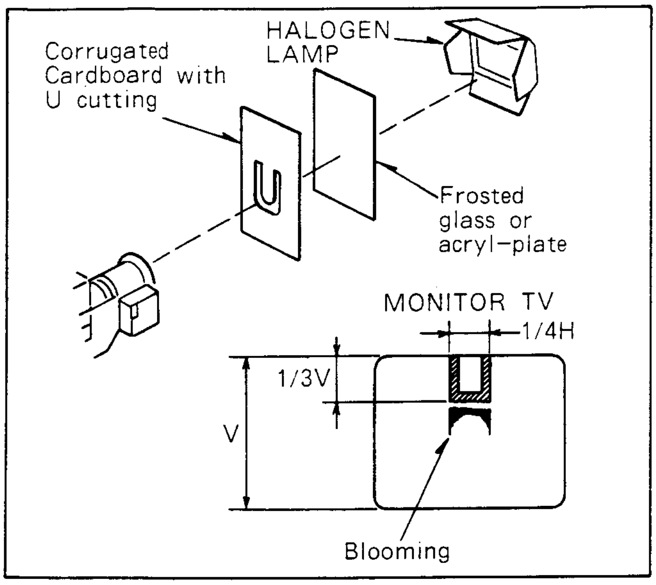

HALOGEN LAMP
Corrugated Cardboard with U cutting
Frosted glass or acryl-plate
MONITOR TV
1/4H
1/3V
V
Blooming

Fig. C7

(2) Set the High Speed Shutter SW to "OFF" portion
(3) Blind the lighting using frosted glass or acryl plate to diffuse incoming light.
And also put a corrugated cardboard which inside is cut to "U" shape as shown in Fig. C8.
(4) Connect the jumper wire between TP516 and TP520 to open the Iris.
(5) Adjust VR201 so that blooming is just disappear.
(If blooming is not disappeared completely, adjust until minimum blooming)
(6) High Speed Shutter "ON" and "OFF" both mode, confirm that the monitored picture does not contain the Blooming even if the camera moves as shown in Fig.C8.

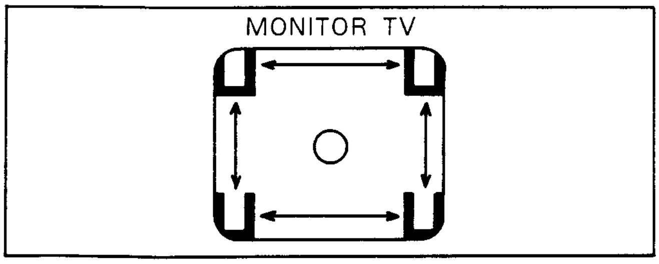


Fig. C8

Note:
J chart is also available for rough adjustment.

(1) Aim the camera at J chart.
(2) Set the lens to fully Tele position.
And set the distance so that lower 1/3 of J chart comes to full picture frame of TV screen.
(3) Connect the jumper wire between TP516 and TP520 to open the Iris.
(4) Adjust the VR201 so that blooming is just disappeared.

4. CCD OUTPUT ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
TP201	VR202	NO	J CHART
M. EQ.		**SPEC.**	
OSCILLOSCOPE		180mV+−10mV	

Note1:
TP201, VR202 : Sensor C.B.A.
TP515, VR327 : Process C.B.A.

(1) Aim the camera to J chart.
(2) Adjust the VR327 (Iris control) so that voltage at TP515 becomes 300mV +− 10mV.
(3) Adjust the VR202 (CCD OUT control) so that level "A" becomes 180mV +− 10mV as shown in Fig C9.

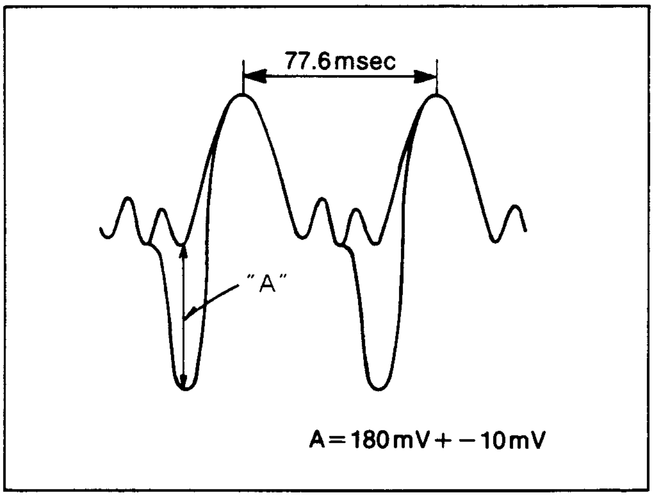


Fig.C9

PROCESS SECTION

5. ALC ADJUSTMENT

TP	**ADJ.**	**LENS CAP**	**CHART**
TP515	VR327	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
OSCILLOSCOPE		0.28V+−0.02Vp-p	

Note:
TP515, VR327 : Process C.B.A.

(1) Set the Iris VR to centre fix position.
(2) Aim the camera at the gray scale chart.
(3) Connect the scope to TP515 and trigger with Pin 7 of FP306 (H−Rate).
(4) Adjust the Camera Unit to obtain 40usec picture frame as shown in Fig.C10.
(5) Adjust the Auto Iris Control (VR327) so that the signal level is 0.28V +− 0.02Vp−p.

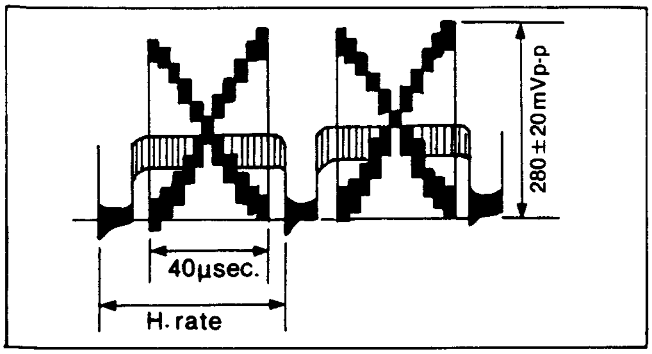


Fig. C10

6. AGC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP514	VR324	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
OSCILLOSCOPE		0.30V +– 0.02Vp–p	

Note 1:
TP514, VR324 : Process C.B.A.

Note 2:
Confirm that voltage at TP523 is less than 3V. If not, adjust Iris VR.

(1) Aim the camera at the gray scale chart.
(2) Connect the scope to TP2 and trigger with Pin 7 of FP306 (H–Rate).
(3) Adjust the Camera Unit to obtain 40usec picture frame as shown in Fig.C11.
(4) Adjust the AGC Control (VR324) so that the signal level is 0.30V +– 0.02Vp–p.

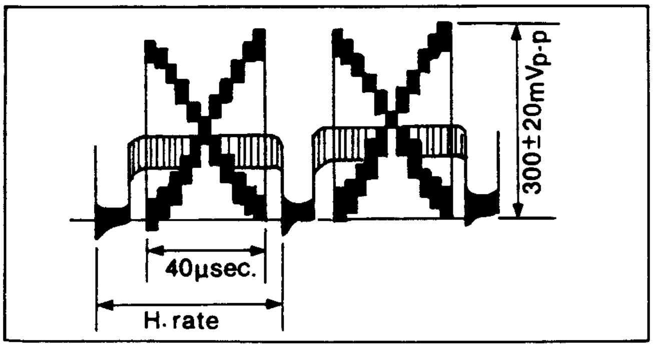


Fig. C11

7. PEDESTAL LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP514	VR301	YES	
M. EQ.		**SPEC.**	
OSCILLOSCOPE		SIGNAL LEVEL EQUALS THE BLANKING (BLANK) LEVEL.	

Note:
TP514, VR301 : Process C.B.A.

(1) Cover the Camera Lens with the Lens Cap.
(2) Connect the scope to TP514 and trigger with Pin 7 of FP306 (H–Rate).
(3) Adjust the Pedestal Level Control (VR301) so that the signal level equals the BLK level as shown in Fig.C12.

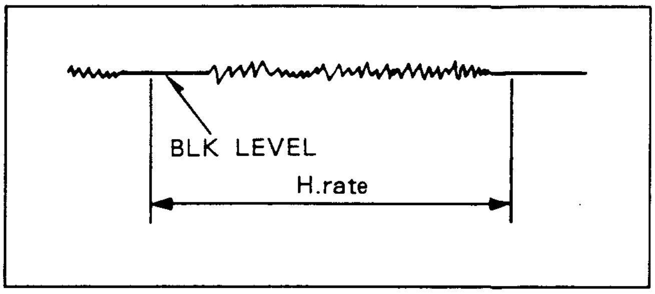


Fig. C12

8. Y 1H/2H DELAY LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TS5, TS2, TS8 (TEST ROUND)	VR320 VR318	NO	GRAY SCALE
M. EQ.		**SPEC.**	
OSCILLOSCOPE		0±4mVp-p	

Note: VR320, TS5, TS2, TS8 : PROCESS C.B.A.
: (The gain CHA, CHB for oscilloscope should be same)

(1) Aim the camera at gray scale chart.
(2) Connect the oscilloscope to TS5 (CHA) and TS2 (CHB).
(3) Set the CHB for "INVERT" mode.
(4) Set the oscilloscope for "ADD" mode.
(5) Adjust the 1H delay level control (VR320) so that waveform becomes 0 +– 4mVp–p as shown below.
(6) Reconnect the CHB probe to TS8, (CHA is still connecting to TS5
CHB : INVERT mode.
oscilloscope : ADD mode.)
(7) Adjust the 2H delay level control (VR318) so that waveform becomes 0 +– 4mVp–p as shown below.

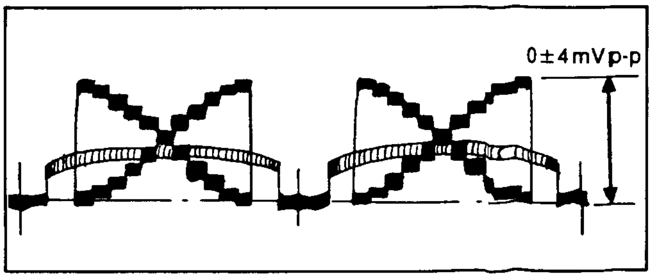


Fig.C13-1

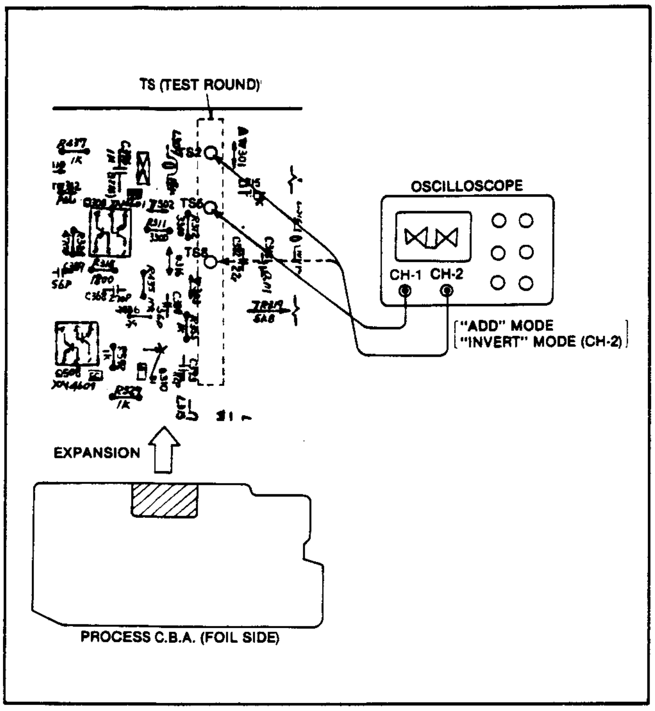

TS (TEST ROUND)
TS2
TS6
TS8
OSCILLOSCOPE
CH-1 CH-2
"ADD" MODE
"INVERT" MODE (CH-2)
EXPANSION
PROCESS C.B.A. (FOIL SIDE)

Fig.C13-2

9. YH LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
PIN 7 OF FP 306	VR315	NO	GRAY SCALE CHART
M. EQ.	**SPEC.**		
OSCILLOSCOPE	B/A = 2.5 +- 0.15		

Note:
VR315, FP306 : Process C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Connect the scope to pin 7 of FP306.
(3) Adjust the YH Level Control (VR315) so that the signal level "B/A" is 2.5 +- 0.15 as shown in Fig.C14.

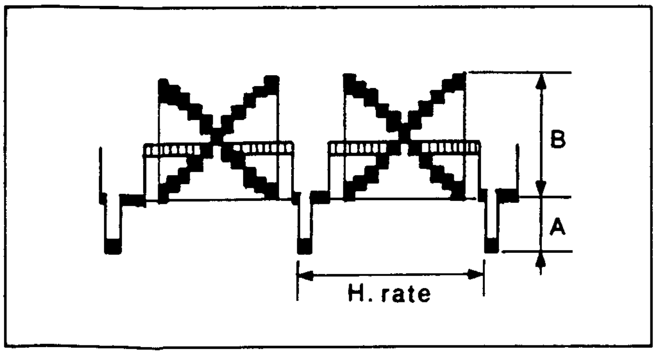


Fig.C14

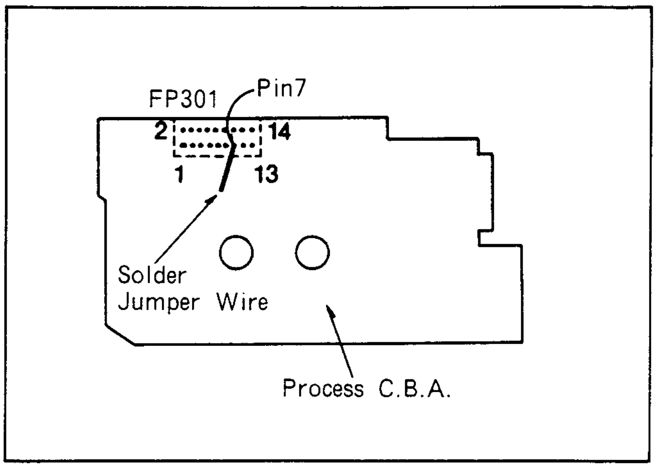

FP301
Pin7
2
14
1
13
Solder Jumper Wire
Process C.B.A.

Fig.C15

10. BURST PHASE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUT	VR329	YES	
M. EQ.	**SPEC.**		
VECTOR SCOPE	135 degree ± 2 degree		

Note:
VR329 : Process C.B.A.

(1) Cover the lens with lens cap.
(2) Supply the video out signal to the vectorscope.
(3) Set the vector scope for " PAL " mode.
(4) Adjust the VR329 so that burst phase become 135 +- 2 degree.

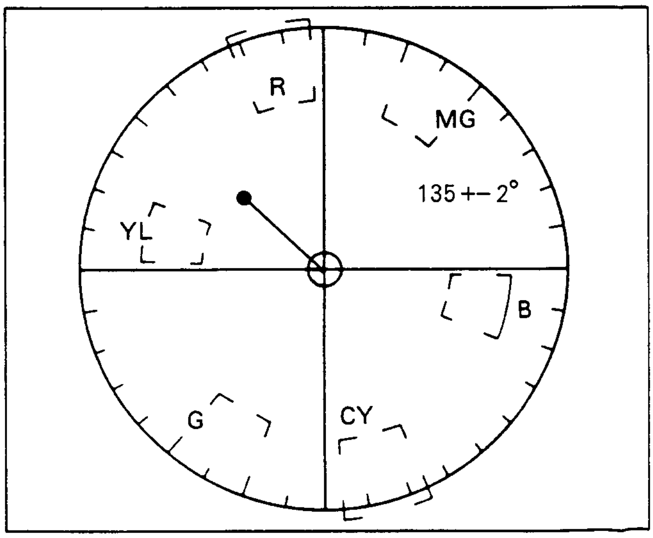

R
MG
135 +- 2°
YL
B
G
CY

Fig. C16

11. CARRIER BALANCE AND BLACK LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR305 VR306 VR303 VR304	YES	

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR305, VR306, VR303, VR304 : Process C.B.A.
TP511, TP512, TP513, TP522, TP511

WITH VECTORSCOPE

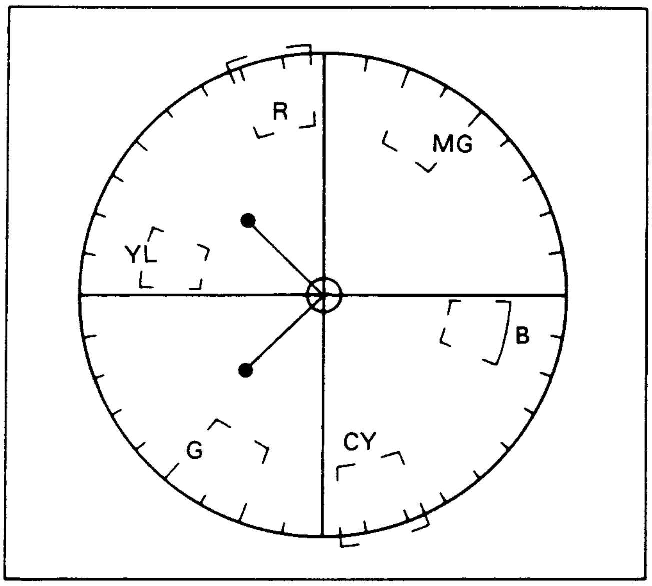


Fig. C17

(1) Cover the Camera Lens with the Lens Cap.
(2) Connect the jumper wire between centre of VR324 between TP511.
(3) Adjust the Black Pedestal Controls (VR305,VR306) so that the colour vectors at the centre of screen on vectorscope.
(4) Disconnect the jumper wire.
(5) Adjust the Carrier Balance Controls (VR303,VR304) so that the colour vectors collect at the centre of screen on the vectorscope.

WITH OSCILLOSCOPE

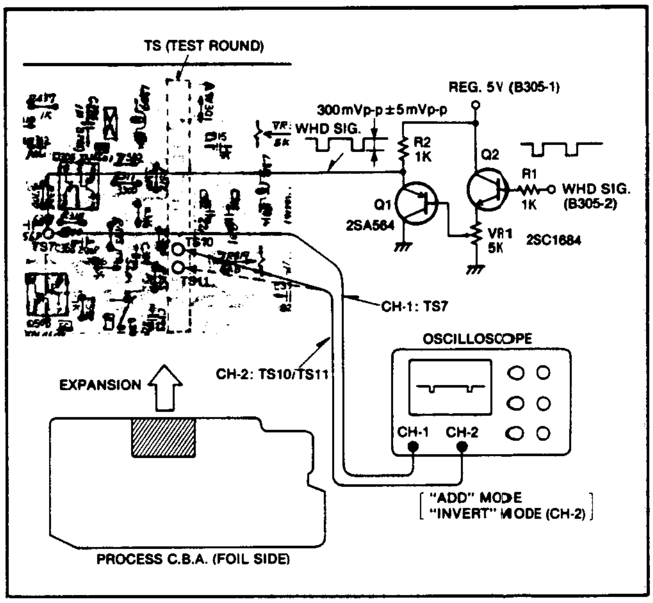
(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR305, and VR306, first and Adjust VR303, VR304 next so that the waveform is minimized as shown in Fig.C20.

12. CHROMA 1H/2H DELAY LEVEL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TS7, TS10, TS11 (TEST ROUND)	VR319 VR317	YES	

M. EQ.	SPEC.
OSCILLOSCOPE	0±4.5mV

(1) Cover the camera lens with the lens cap.
(2) Supply the "WHD" signal(B305−2:process C.B.A) to TS7(test round) through the Buffer circuit and adjust VR1(on Buffer circuit) so that the voltage of TS7(test round) becomes 300mVp−p+−5mVp−p as shown in Fig.C18−1.



TS (TEST ROUND)
REG. 5V (B305-1)
300mVp-p±5mVp-p
VR 5K
WHD SIG.
R2 1K
Q2
R1 1K
WHD SIG. (B305-2)
Q1 2SA564
VR1 5K
2SC1684
TS7
TS10
TS11
CH-1: TS7
OSCILLOSCOPE
CH-1
CH-2
EXPANSION
CH-2: TS10/TS11
"ADD" MODE
"INVERT" MODE (CH-2)
PROCESS C.B.A. (FOIL SIDE)

Fig. C18−1

3) Set the oscilloscope to"ADD" mode and "INVERT" mode for CH−2.
And connect the oscilloscope CH−1 to TS7(test round) and CH−2 to TS10(test round).
(4) Adjust VR319 so that the level of waveform becomes 0+−4.5mV as shown in Fig.C18−2.
(5) Connect the oscilloscope CH−1 to TS7(test round) and CH2 to TS11(test round).
(6) Adjust VR317 so that the level of waveform becomes 0+−4.5mVp−p as shown in Fig.C18−2.

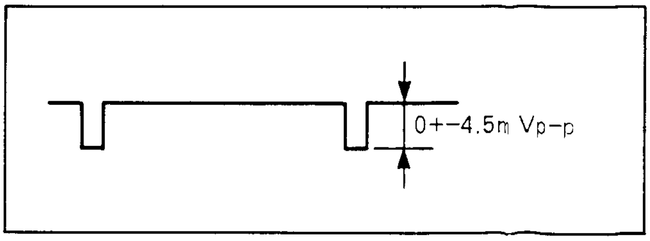


Fig.C18−2

13. INDOOR WHITE BALANCE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR311 VR312	NO	WHITE CHART
M. EQ.	**SPEC.**		
VECTORSCOPE	CENTER OF VECTORSCOPE		
OSCILLOSCOPE	WAVEFORM IS MINIMIZED		

Note:
VR311, VR312 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White Balance Switch to "INDOOR" side.
(2) Connect the jumper wire among TP511, TP512 and TP513 on process C.B.A. to cut the R−Y, B−Y feed back loop.
(3) Aim the camera at the White Chart.
(4) Supply the video signal to the vectorscope.
(5) Adjust the White Balance Controls (VR311 and VR312) so that the colour vectors are collected at the centre of screen on the vectorscope as shown in Fig. C19.

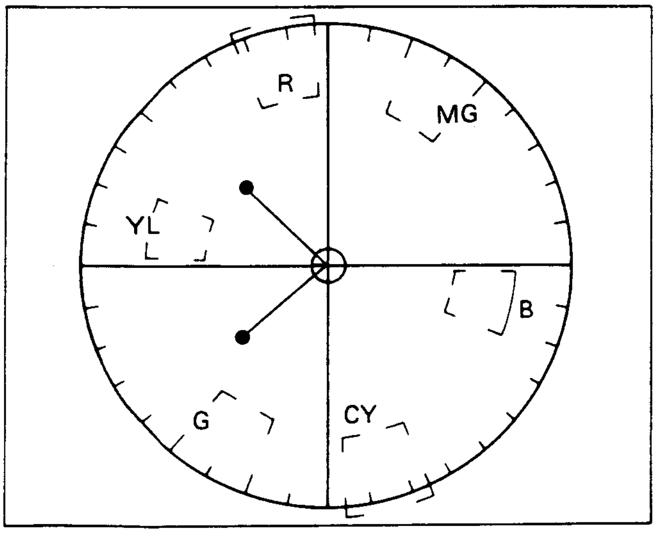


Fig.C19

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR311 and VR312 so that the waveform is minimized.

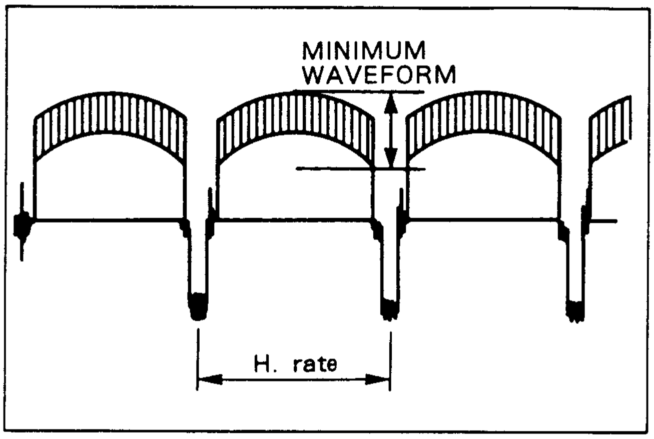


Fig.C20

14. OUTDOOR WHITE BALANCE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR528 VR529	NO	WHITE CHART
M. EQ.	**SPEC.**		
VECTORSCOPE	CENTER OF VECTORSCOPE		
OSCILLOSCOPE	WAVEFORM IS MINIMIZED		

Note:
VR528, VR529 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White Balance Switch on the Camera Operation Unit to the "OUTDOOR".
(2) Connect the jumper wire among TP511, TP512 and TP513 on Process C.B.A. to cut the R−Y, B−Y feed back loop.
(3) Aim the camera at the White Chart (lighting should be 3200 degrees K Halogen lamp.)
(4) Supply the video signal to the vectorscope.
(5) Attach the colour temperature conversion filter **4822 397 60152** and **4822 397 60153** which convert 3200 degrees Kelvin to 5600 degrees Kelvin in front of the lens (Refer to Note 1).
(6) If the colour temperature conversion filter is not available, use a day light source. (Refer to Note 2)
(7) Adjust the White Balance (B−Y) Outdoor Gain and White Balance (R−Y) Outdoor Gain Controls (VR528 and VR 529) so that the colour vectors move to the centre of screen on the vectorscope. (Refer to Fig. C21)
(8) Remove the colour temperature conversion filter with the fixture from the lens.
(9) Remove the jumper wire from TP511, TP512, TP513.

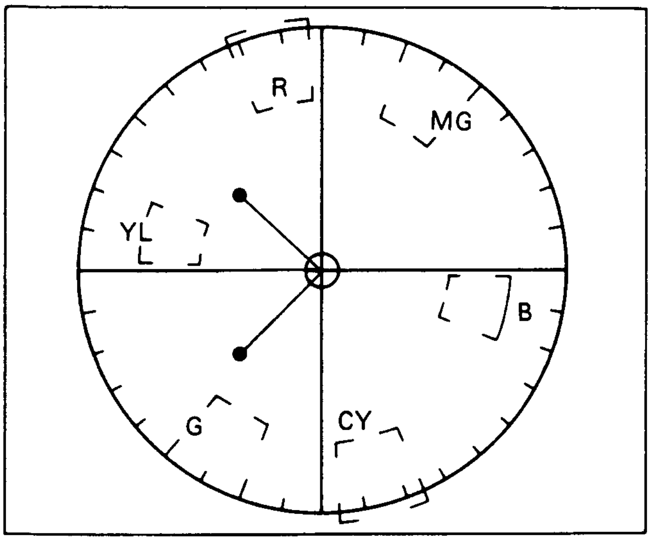


Fig.C21

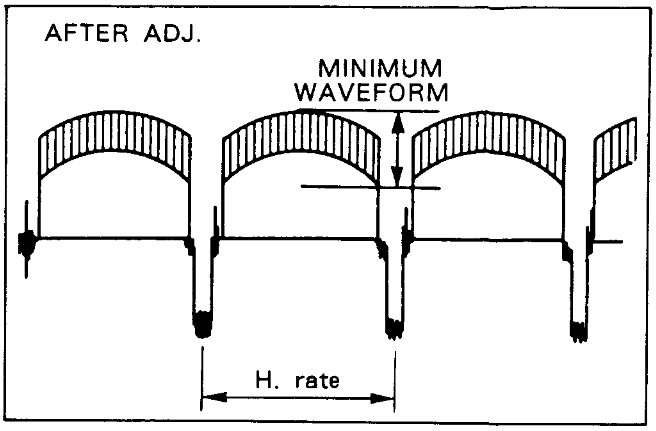

AFTER ADJ.
MINIMUM WAVEFORM
H. rate

Fig.C22

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR528 and VR529 so that the waveform is minimized.

<How to make a fixture>

a) Print the actual measure an the hard paper referring Fig. C23.
b) Cut the paper along the solid line.
c) Apply the past to the oblique line.
d) Fold the paper along the dotted line.
e) Construct the fixture referring completion drawing as shown in Fig.C23.

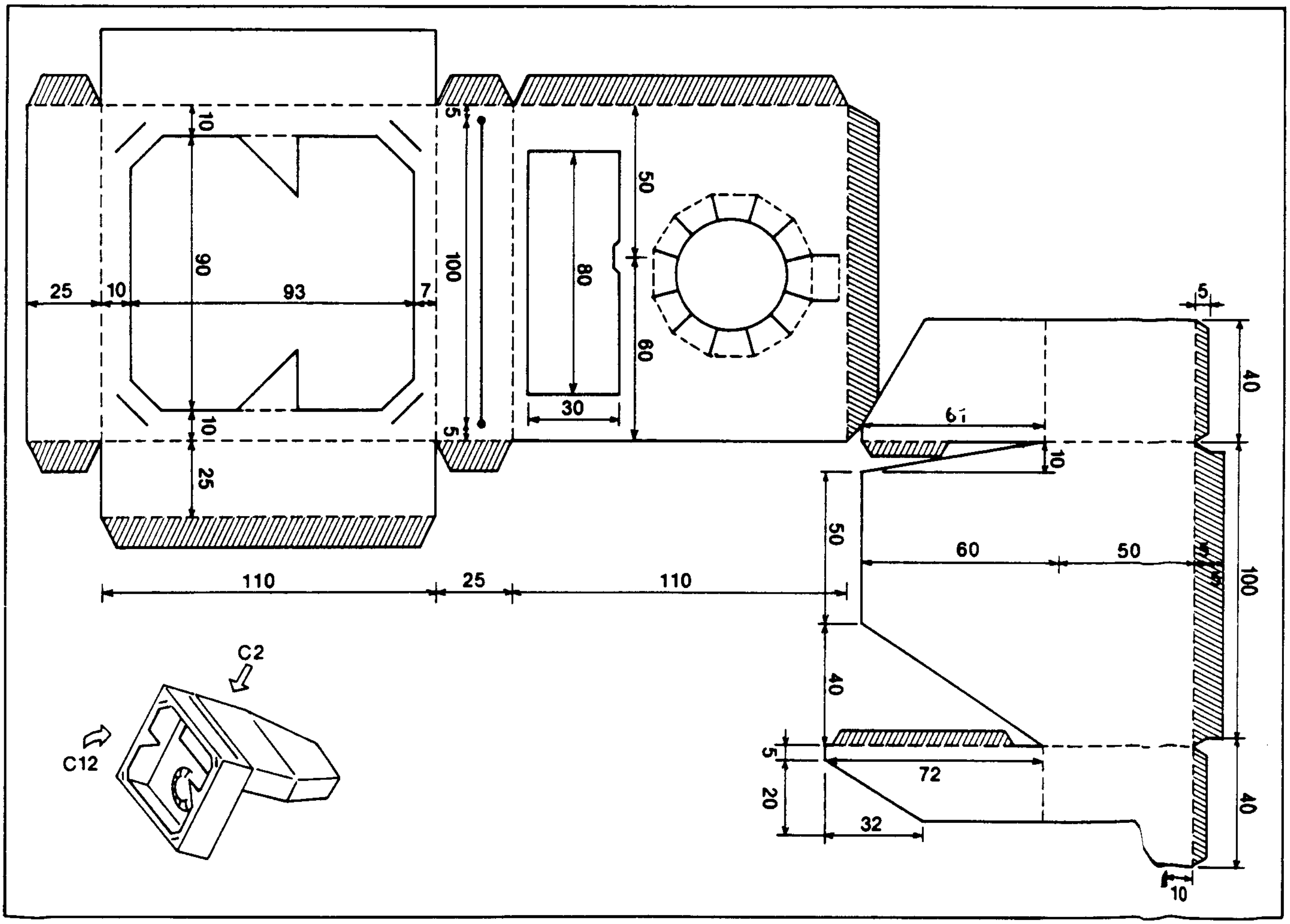

10
90
10
25
25
10
93
7
5
100
5
80
30
50
60
110
25
110
5
40
61
10
50
60
50
5
100
40
5
72
20
32
40
10
C2
C12

Fig. C23

Note 1:
Attach the fixture (make a fixture yourself referring measurements and How to make fixture below shown in Fig.C23) to the lens and then set the colour temperature conversion filter to fixture.

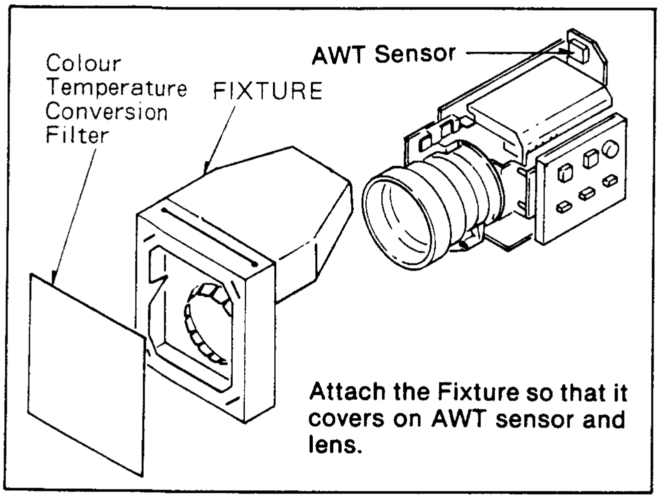

Colour Temperature Conversion Filter
FIXTURE
AWT Sensor
Attach the Fixture so that it covers on AWT sensor and lens.

Fig. C24

Note 2:
(1) Aim the camera at a sunny source (window, etc.).
(2) Incoming light must be from an outdoor source only, source and illumination on the sensor must be more than 500Lx, and colour temperature must be within 5000 degrees to 6000 degrees Kelvin.
(Refer to Fig. C25)

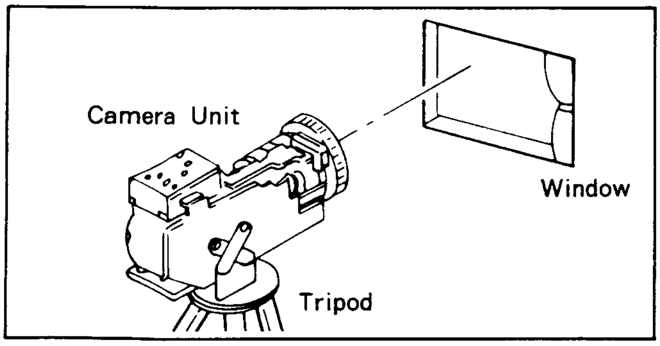

Camera Unit
Window
Tripod

Fig.C25

15. AWB OFFSET ADJUSTMENT WITH OSCILLOSCOPE

TP	ADJ.	IRIS	CHART
TP511, TP512 TP513	VR530 VR531		WHITE CHART
M.EQ.		**SPEC.**	
OSCILLOSCOPE		0 +− 0.1V	

(1) White balance selector should be set for "INDOOR".
(2) Aim the camera to white chart.
(3) Confirm that any GND probe of oscilloscope is not connected to GND.
(4) Connect the GND probe to TP511.
And hot probe to TP512. Set the oscilloscope to DC range.
(5) Adjust the VR530 so that voltage become 0 +− 0.1V.
(6) Connect the GND probe to TP511 and hot probe to TP513.
(7) Adjust the VR531 so that voltage become 0 +− 0.1V.

WITH VECTOR SCOPE

TP	ADJ.	IRIS	CHART
VIDEO OUT	VR530 VR531		WHITE CHART
M.EQ.		**SPEC.**	
VECTOR SCOPE		VECTORS CENTRE	

(1) Aim the camera at the white chart and focus the lens on the object.
(2) Connect the VECTOR SCOPE to the video output.
(3) Adjust the offset control (VR530, VR531) so that the vector comes to centre as shown below.

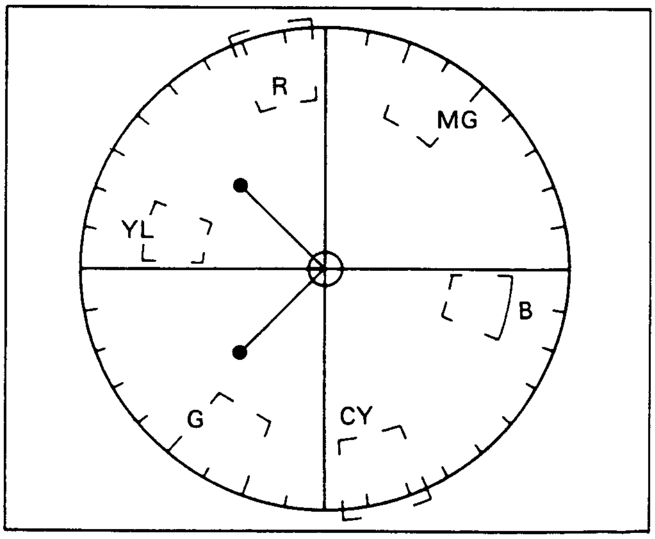


Fig.C26

16. COLOUR PHASE AND R-Y/B-Y GAIN ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR310, VR307, VR314, VR313, VR328	NO	COLOUR CHIP CHART

M. EQ.	SPEC.
VECTORSCOPE	Fig. C27

Note:
VR310, VR307, VR314, VR313, VR328 : Process C.B.A

(1) Aim the camera at a Colour Chip Chart.
(2) Set the vector scope to **PAL** mode.
(3) Adjust the VR310 so that cracked Red vector comes one.
(4) Set the vector scope to PAL mode.
(5) Connect the jumper wire among TP511, TP512 and TP513 on the Process C.B.A.
(6) Supply the video signal to the vectorscope.
(7) Adjust the Colour Phase Control (VR307 and VR314), the R−Y Gain Control (VR313) and the B−Y Gain Control (VR328) so that the vector of each colour is as shown in Fig.C24.

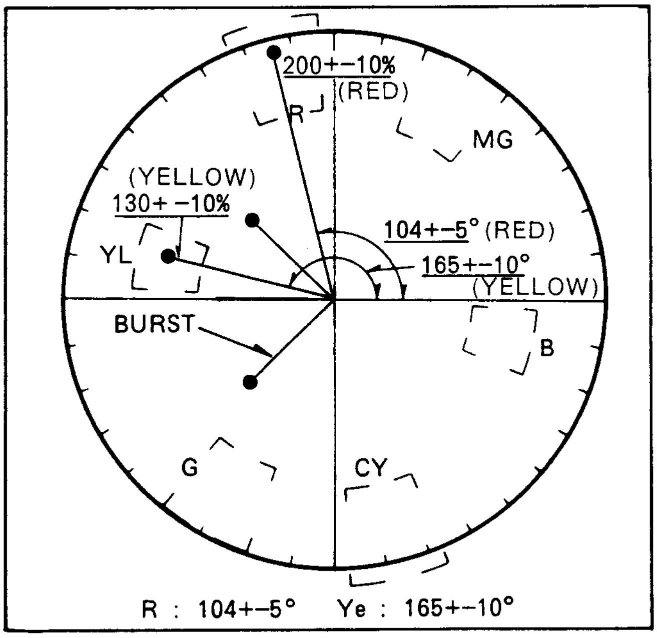


Fig. C27

17. HIGH INTENSITY SUPPRESS (HC) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR309	NO	COLOUR CHART

M. EQ.	SPEC.
TV MONITOR	HALF SIZE (YELLOW) YELLOW COLOUR IS JUST BEFORE CUT OFF

Note:
VR309 : Process C.B.A.

(1) Aim the camera at the colour chart. (colour bar).
(2) Set the horizontal picture frame (H size) to 40usec, and memorize the level of yellow part.
(3) Set the horizontal picture frame to 16usec.
(4) In case that the level of yellow part is more than 50% compared with the yellow level of when horizontal picture frame is 40 usec :
Adjust the VR309 so that the level of yellow becomes 50% as shown in Fig.C28.
(5) In case that the level of yellow part is already less than 50% of when the horizontal picture frame is 40usec:
Adjust the VR309 until just before yellow part begins to disappear.

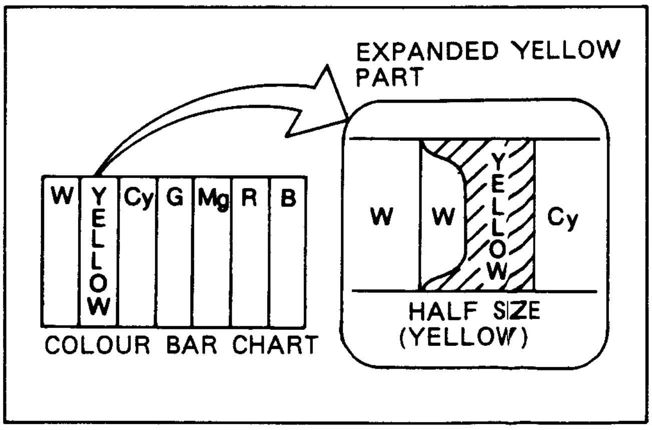


Fig. C28

18. AWT MODE (OFFSET) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR525 VR526	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR525,VR526 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance selector for "AUTO" position.
(2) Aim the camera at the white chart.
(3) Supply the video signal to the vectorscope.
(4) Connect the jumper wire among TP511, TP512 and TP513 to cut the R-Y, B-Y feed back line.
(5) Set the diffusion plate on to surface of AWT sensor and taping around sensor with black tape so that any light is not entered to sensor from the gap between sensor and diffusion plate.
(6) Adjust the VR525 and VR526 so that the colour vectors move to centre of screen on vector scope. (Refer to Fig.C29)

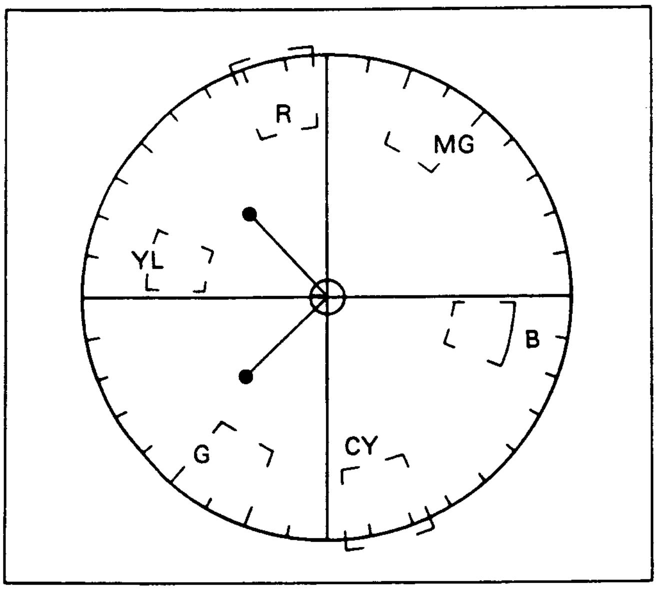


Fig. C29

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR525 and VR526 so that the waveform is minimized.

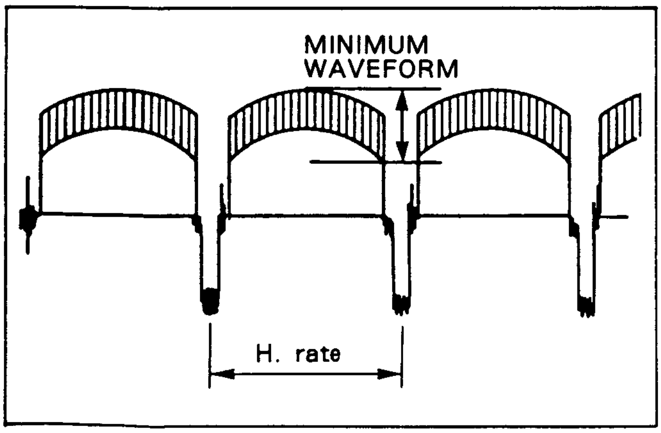


Fig. C30

19. AWT MODE (GAIN) ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
VIDEO OUTPUT	VR523, VR527	NO	WHITE CHART

M. EQ.	SPEC.
VECTORSCOPE	CENTER OF VECTORSCOPE
OSCILLOSCOPE	WAVEFORM IS MINIMIZED

Note:
VR523, VR527 : Process C.B.A.

WITH VECTORSCOPE

(1) Set the White balance selector for "AUTO" position.
(2) Aim the camera at the white chart, Lighting should be a 3200 degrees K Halogen lamp.
(3) Supply the video signal to the vectorscope.
(4) Connect the jumper wire among TP511, TP512 and TP513.
(5) Attach the diffusion plate **4822 466 70675** onto surface of AWT sensor and taping around the sensor with black tape so that any light is not entered to sensor from the gap between sensor and diffusion plate.
(6) Set the fixture (refer to Note 1 of item 15, outdoor white balance Adjustment) to the lens.
(7) Set the colour temperature conversion filter to the fixture as shown in Fig. C31.
4822 397 60154 to front of lens

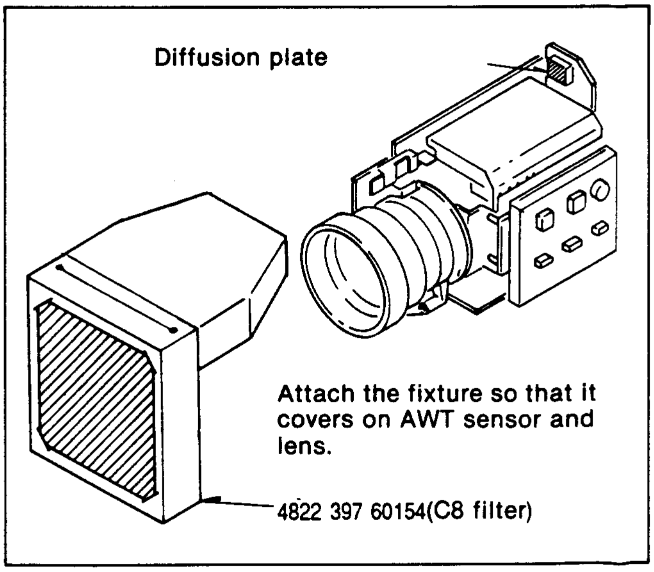

Diffusion plate
Attach the fixture so that it covers on AWT sensor and lens.
4822 397 60154(C8 filter)

Fig.C31

(8) Adjust the VR523 and VR527 so that colour vectors collect at centre.
(9) Next, remove the colour temperature conversion filter with fixture from the lens.
If the colour vectors do not collect at centre, adjust the AWT offset adjustment controls (VR525, VR526) so that colour vectors come to centre.
(10) Repeat steps (6)–(9).

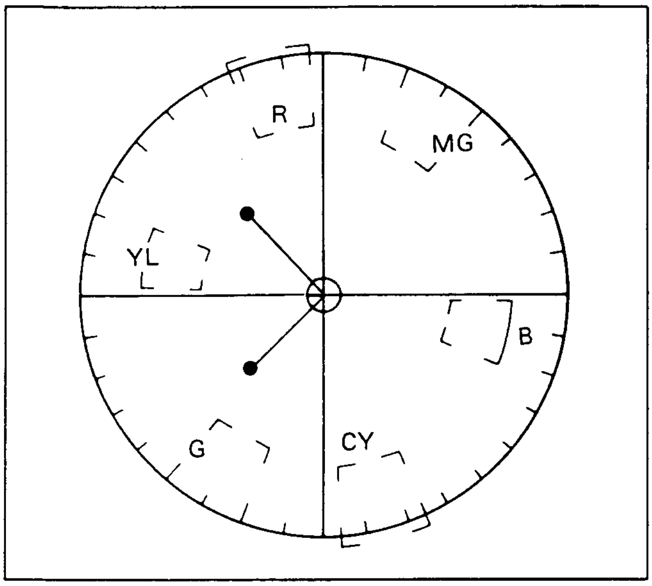


Fig. C32

WITH OSCILLOSCOPE

(1) Adjustment condition and procedure are same as using vectorscope.
(2) Adjust VR523, VR527, VR525 and VR526 that the waveform is minimized.

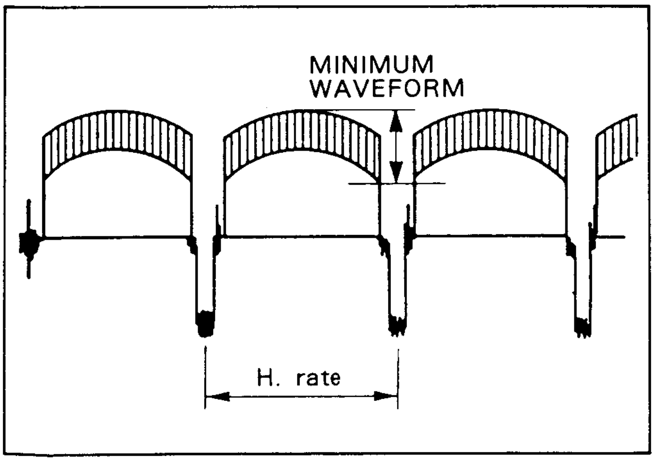


Fig. C33

AUTO FOCUS SECTION

PREPARATION

The following adjustments are for the Auto Focus Unit.

(1) Camera zoom is positioned at the end of TELE side.

20. AF GATE ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP702 TP703	C703	NO	
M. EQ.	**SPEC.**		
OSCILLOSCOPE	T = 9.6 +– 0.4u-sec.		

Note:
TP702, TP703, C703 : AF C.B.A.

(1) Set the AF Gate Control (C703) as shown in Fig.C34.

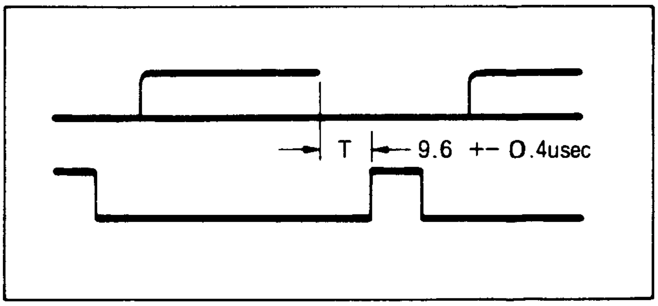


Fig. C34

21. BIMOLF GAIN CONTROL ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP704	VR703	YES	
M. EQ.	**SPEC.**		
OSCILLOSCOPE	A=11V +– 0.2Vp-p		

Note:
TP704, VR703 : AF C.B.A.

(1) Set the Focus Switch to the MANUAL position.
(2) Cover the camera lens with the lens cap.
(3) Connect the scope to the TP704.
(4) Adjust the Bimolf Gain Control (VR703) so that the signal level (A) is 11V +– 0.2Vp-p.

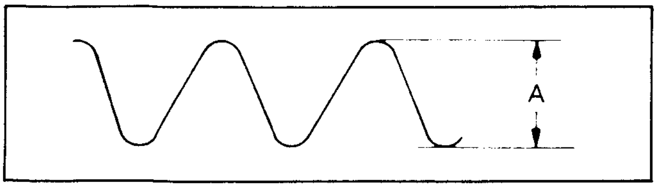


Fig. C35

22. HALL AMX ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
TP518, TP516 TP521, TP520	VR701 VR702	NO	GRAY SCALE CHART

M. EQ.	SPEC.
D.V.M.	----------------

Note:
TP516, TP518, TP520, TP521 : Process C.B.A.
VR701, VR702 : AF C.B.A.

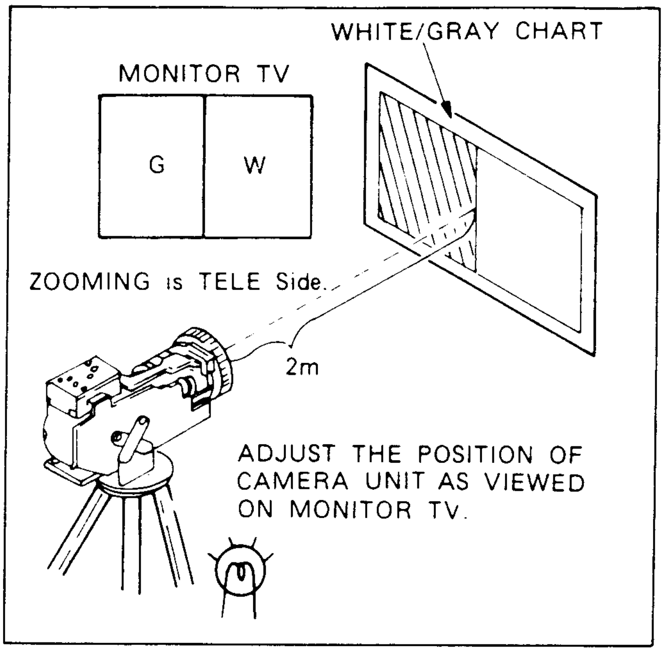
(1) Connect a jumper wire between TP516 and TP521 to close Iris.
(2) Adjust the HALL AMP Control (VR701) so that the voltage level at TP518 is 1.74V +− 0.02V.
(3) Disconnect the jumper wire between TP516 and TP521.
(4) Next, connect a jumper wire between TP516 and TP520 to open the Iris.
(5) Adjust the HALL AMP Control (VR702) so that the voltage Level of TP518 is 3.72V +− 0.05V.
(6) Disconnect the jumper wire between TP516 and TP520.
(7) Next, confirm the voltage level at TP518 by connecting a jumper wire between TP516 and TP521.
(8) If the voltage level at TP518 is not 1.74V +− 0.02V, repeat steps (1) − (6).

23. AF VH FREQUENCY ADJUSTMENT

TP	ADJ.	IRIS CAP	CHART
TP705	C737	NO	WHITE/GRAY CHART

M. EQ.	SPEC.
OSCILLOSCOPE	A = 2.80V +− 0.05V DC−RANGE

Note:
TP705, TP710 : AF C.B.A.
TP516, TP520 : Process C.B.A.
ZOOM : TELE SIDE
Focus : AUTO



ADJUST THE POSITION OF CAMERA UNIT AS VIEWED ON MONITOR TV.

Fig. C36

(1) Connect a jumper between TP516 and TP520 to open the Iris.
(2) Aim the camera at the white/gray chart that was attached to previous service manual of Movie Camera.
(3) Set the lighting condition so that voltage at TP710 becomes 180mV +− 10mVp−p as shown below.

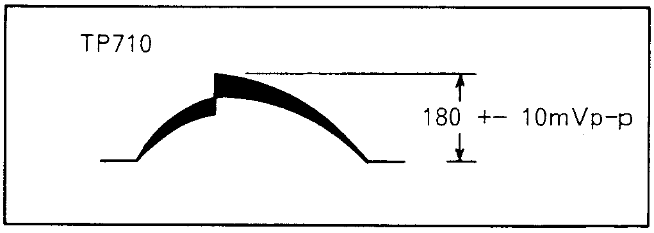


Fig. C37

(4) Adjust the VH frequency level control (C737) so that DC level at TP705 becomes 2.8V +− 0.05V as shown below.

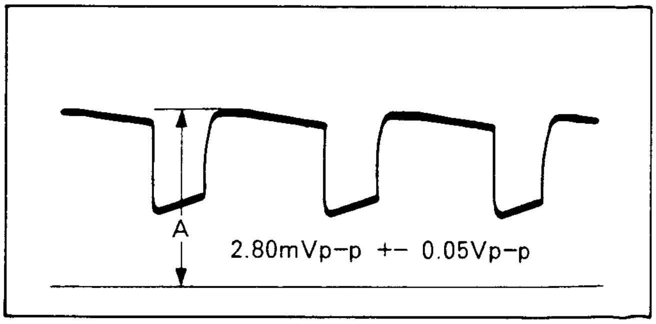


Fig. C38

2-4-2. ELECTRICAL ADJUSTMENT FOR E.V.F. SECTION

PREPARATION

The following adjustments are for Electronic Viewfinder.

(1) Connect the Viewfinder plug to the E.V.F. connector on the unit.
(2) The camera circuit must be completely aligned before viewfinder adjustments are made.

1. H-OSC ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
Pin 1 of P801	VR802	NO	BALL CHART
M. EQ.		**SPEC.**	
FREQUENCY COUNTER		15.9KHz +- 0.1KHz	

Note:
P801,VR802 : E.V.F. C.B.A.

(1) Connect the frequency counter to Pin1 of P801.
(2) Adjust the H-OSC (VR802) so that the frequency is 15.9 +- 0.1KHz.

2. CENTERING ADJUSTMENT

(1) Aim the camera at the registration chart.
(2) Adjust the Deflection Yoke Centering Magnets by turning them so that the picture on monitor TV is centered.

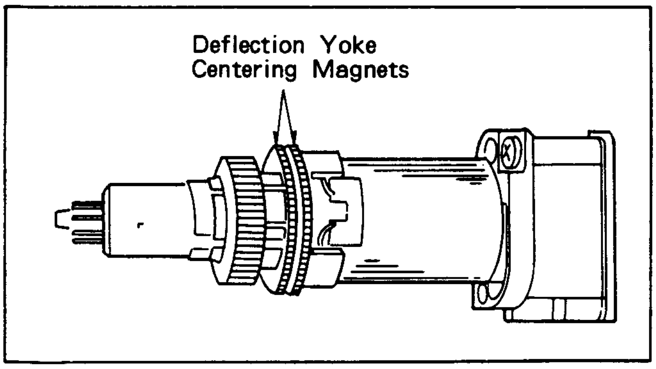


Fig. C39

3. FOCUS ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR803	NO	BALL CHART
M. EQ.		**SPEC.**	
VIEWFINDER		BEST RESOLUTION	

Note:
VR803 : E.V.F. C.B.A.

(1) Aim the camera at the Ball chart.
(2) Adjust the focus control (VR803) for best resolution in the viewfinder.

4. V. SIZE ADJUSTMENT

TP	ADJ.	LENS CAP	CHART
	VR801	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
VIEWFINDER		VERTICAL SIZE IS FIXED.	

Note:
VR801 : E.V.F. C.B.A.

(1) Aim the camera at the gray scale chart.
(2) Adjust the Vertical Size (VR801) so the Vertical Size is correct and the picture does not roll as shown in Fig.C40.

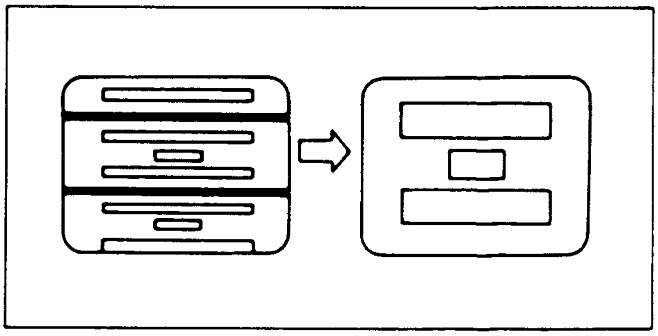


Fig. C40

5. BRIGHTNESS ADJUSTMENT

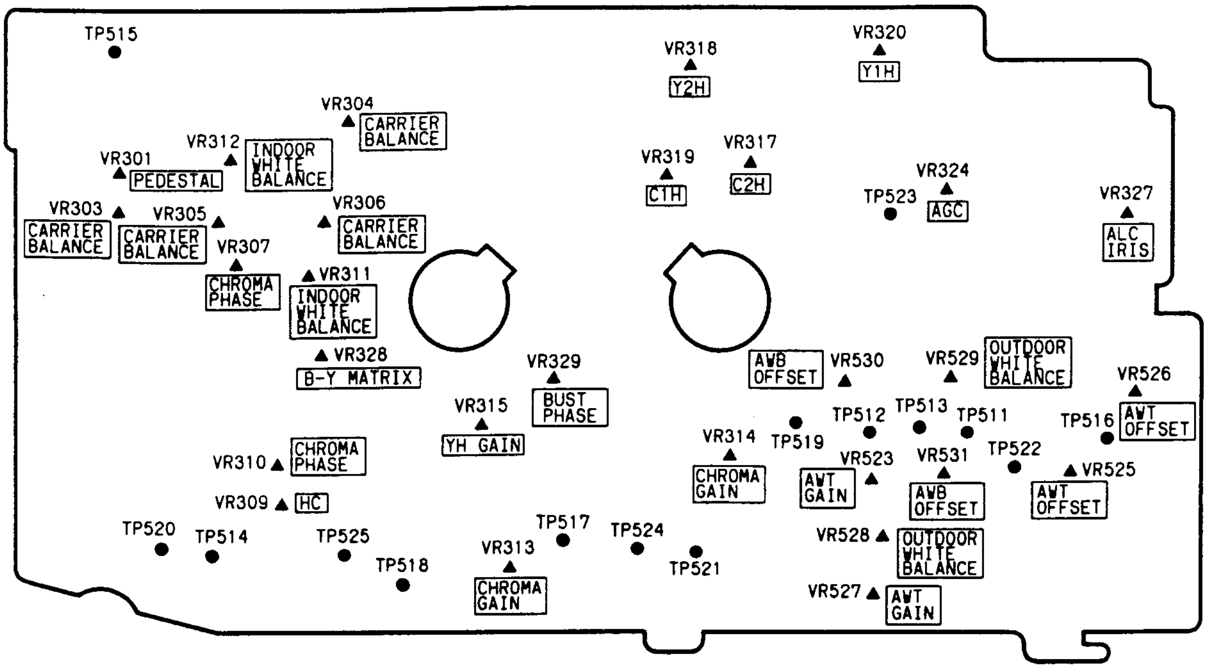
TP	ADJ.	LENS CAP	CHART
	VR804	NO	GRAY SCALE CHART
M. EQ.		**SPEC.**	
VIEWFINDER		NATURAL GRADATION	

Note:
VR804 : E.V.F. C.B.A.

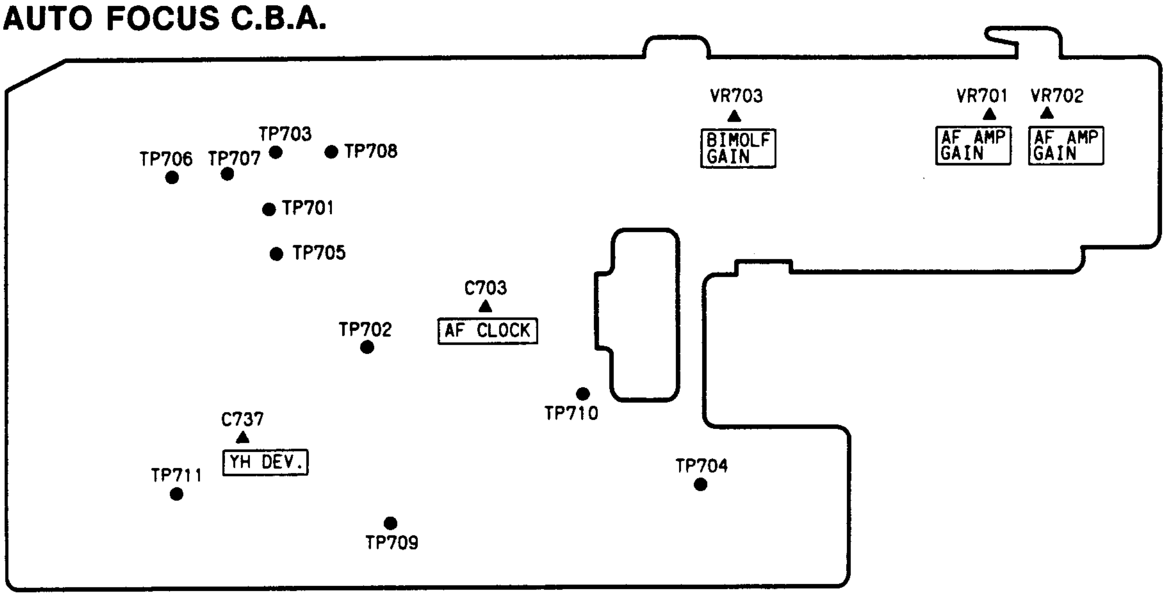
(1) Aim the camera at gray scale chart.
(2) Adjust the brightness control (VR804) so that the black and white bars in the EVF screen are the same as they are in the monitor TV screen.

LOCATION OF TEST POINTS & CONTROLS (1)

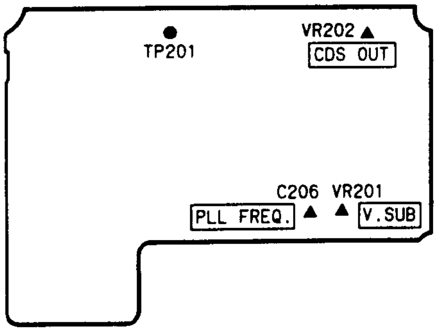
PROCESS C.B.A.


TP515
VR318
Y2H
VR320
Y1H
VR304
CARRIER BALANCE
VR312
INDOOR WHITE BALANCE
VR301
PEDESTAL
VR319
C1H
VR317
C2H
VR324
AGC
TP523
VR327
ALC IRIS
VR303
CARRIER BALANCE
VR305
CARRIER BALANCE
VR306
CARRIER BALANCE
VR307
CHROMA PHASE
VR311
INDOOR WHITE BALANCE
VR328
B-Y MATRIX
VR329
BUST PHASE
VR315
YH GAIN
AWB OFFSET
VR530
VR529
OUTDOOR WHITE BALANCE
VR526
AWT OFFSET
TP512
TP513
TP511
TP516
VR314
TP519
CHROMA GAIN
VR523
AWT GAIN
VR531
AWB OFFSET
TP522
VR525
AWT OFFSET
VR310
CHROMA PHASE
VR309
HC
TP520
TP514
TP525
TP518
TP517
VR313
CHROMA GAIN
TP524
TP521
VR528
OUTDOOR WHITE BALANCE
VR527
AWT GAIN

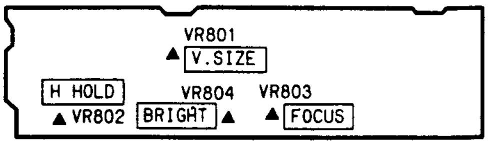
AUTO FOCUS C.B.A.


VR703
BIMOLF GAIN
VR701
AF AMP GAIN
VR702
AF AMP GAIN
TP703
TP708
TP706
TP707
TP701
TP705
C703
AF CLOCK
TP702
TP710
C737
YH DEV.
TP711
TP704
TP709

SENSOR C.B.A.

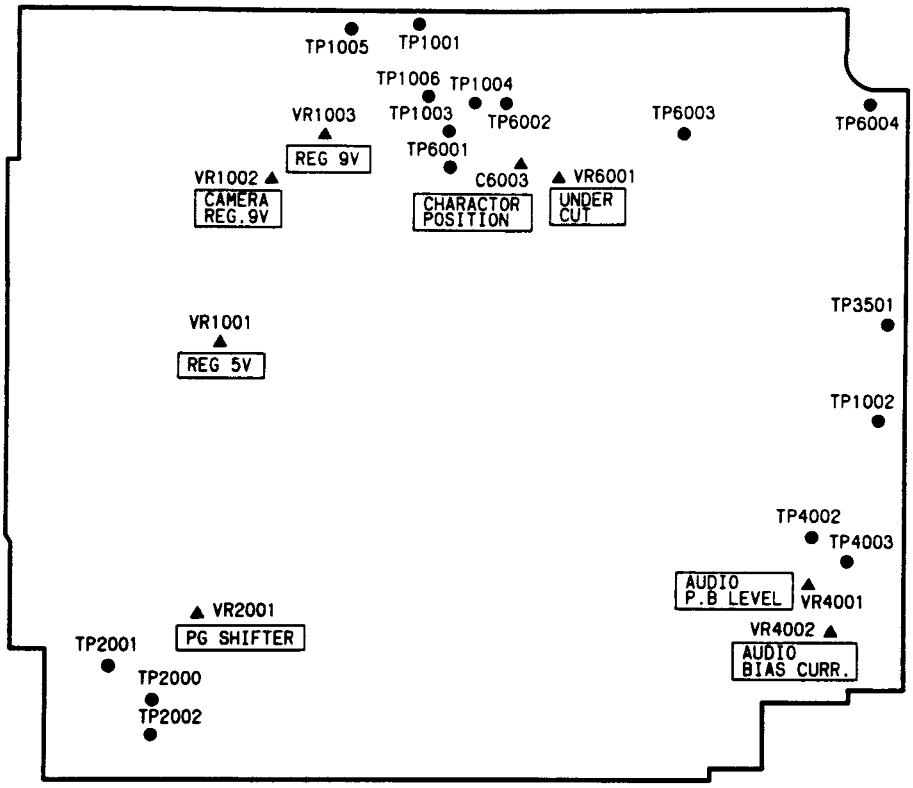

TP201
VR202
CDS OUT
C206
VR201
PLL FREQ.
V.SUB

E.V.F. C.B.A.

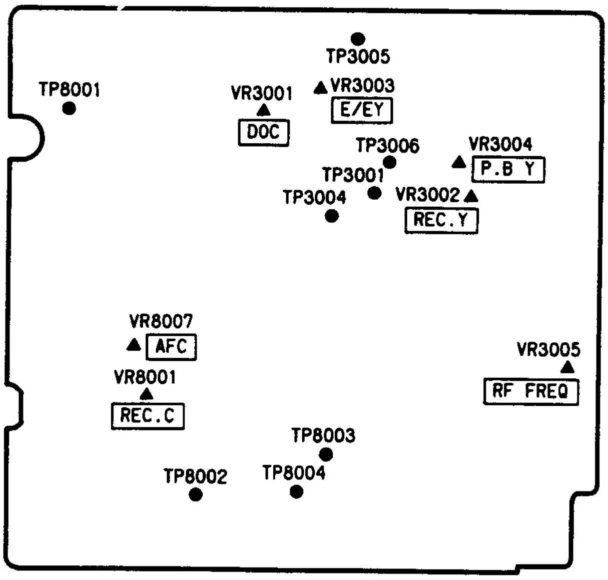

VR801
V.SIZE
H HOLD
VR802
VR804
BRIGHT
VR803
FOCUS

LOCATION OF TEST POINTS & CONTROLS (2)

MAIN C.B.A.


TP1005
TP1001
TP1006
TP1004
VR1003
TP1003
TP6002
TP6003
TP6004
REG 9V
TP6001
VR1002
C6003
VR6001
CAMERA REG.9V
CHARACTOR POSITION
UNDER CUT
TP3501
VR1001
REG 5V
TP1002
TP4002
TP4003
AUDIO P.B LEVEL
VR4001
VR2001
PG SHIFTER
VR4002
TP2001
AUDIO BIAS CURR.
TP2000
TP2002

LUMINANCE & CHROMINANCE PACK C.B.A.


TP3005
VR3003
TP8001
VR3001
E/EY
DOC
TP3006
VR3004
TP3001
P.B Y
TP3004
VR3002
REC.Y
VR8007
AFC
VR3005
VR8001
RF FREQ
REC.C
TP8003
TP8002
TP8004

2-4-3. ELECTRICAL ADJUSTMENT FOR VTR SECTION

TEST EQUIPMENT AND TOOLS

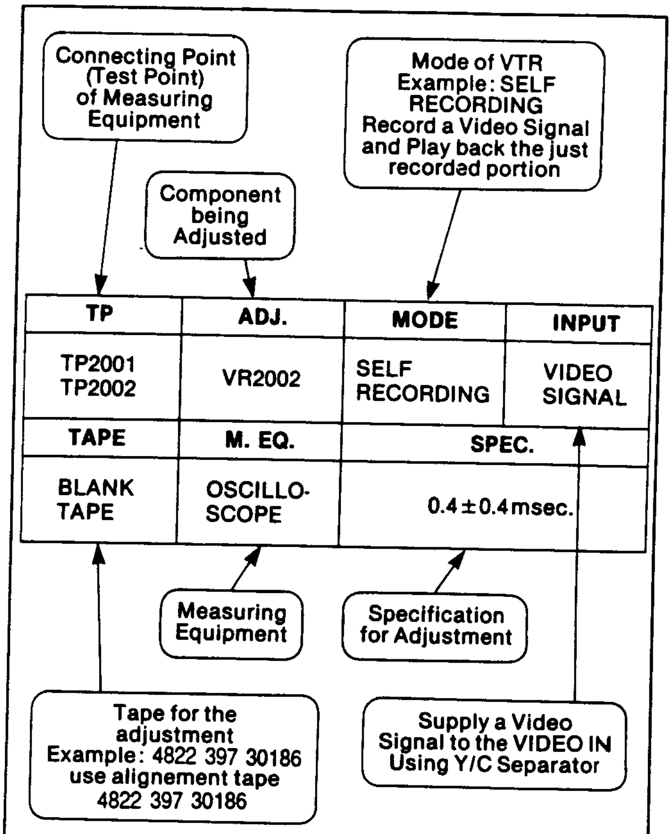
The following equipments are required for adjustment of the VHS-C Movie VKR6843.

1. VTVM (Vacuum Tube Volt Meter)
   DVM (Digital Volt Meter)
   Voltage Range : 0.01～50V
2. Dual Trace Oscilloscope
   Voltage Range : 0.06～50V/div
   Frequency Range : 0～50MHz
   Probe : 10:1 or 1:1
3. Frequency counter
   Frequency Range : 0～10MHz
4. Signal Generator (Sinewave)
   Frequency Range : 0～10MHz
5. Video Sweep Generator
   Frequency Range : 0～10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS-C Alignment Tape (4822 397 30186)
9. VHS-C Blank Tape
10. Pattern Generator

PREPARATION

1. Remove the casing panels.
   (Refer to the disassemble method)
2. Connect the Y/C separator 4822 395 90255 to the extension cable 4822 321 22748 with Y/C separator connection cable 4822 321 23181 and connect this extension cable 4822 321 22748 to connector P1002 on Main C.B.A.
3. Supply the video signal to the video circuit by using the Y/C separator 4822 395 90255 as shown in Fig. E1.
4. Supply the audio signal to audio circuit through the External Microphone Socket.

HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Component being Adjusted
Mode of VTR Example: SELF RECORDING Record a Video Signal and Play back the just recorded portion
Measuring Equipment
Specification for Adjustment
Tape for the adjustment Example: 4822 397 30186 use alignement tape 4822 397 30186
Supply a Video Signal to the VIDEO IN Using Y/C Separator

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	0.4±0.4msec.	

Note: If ☒ appears in any block, this means it is not used or not important.

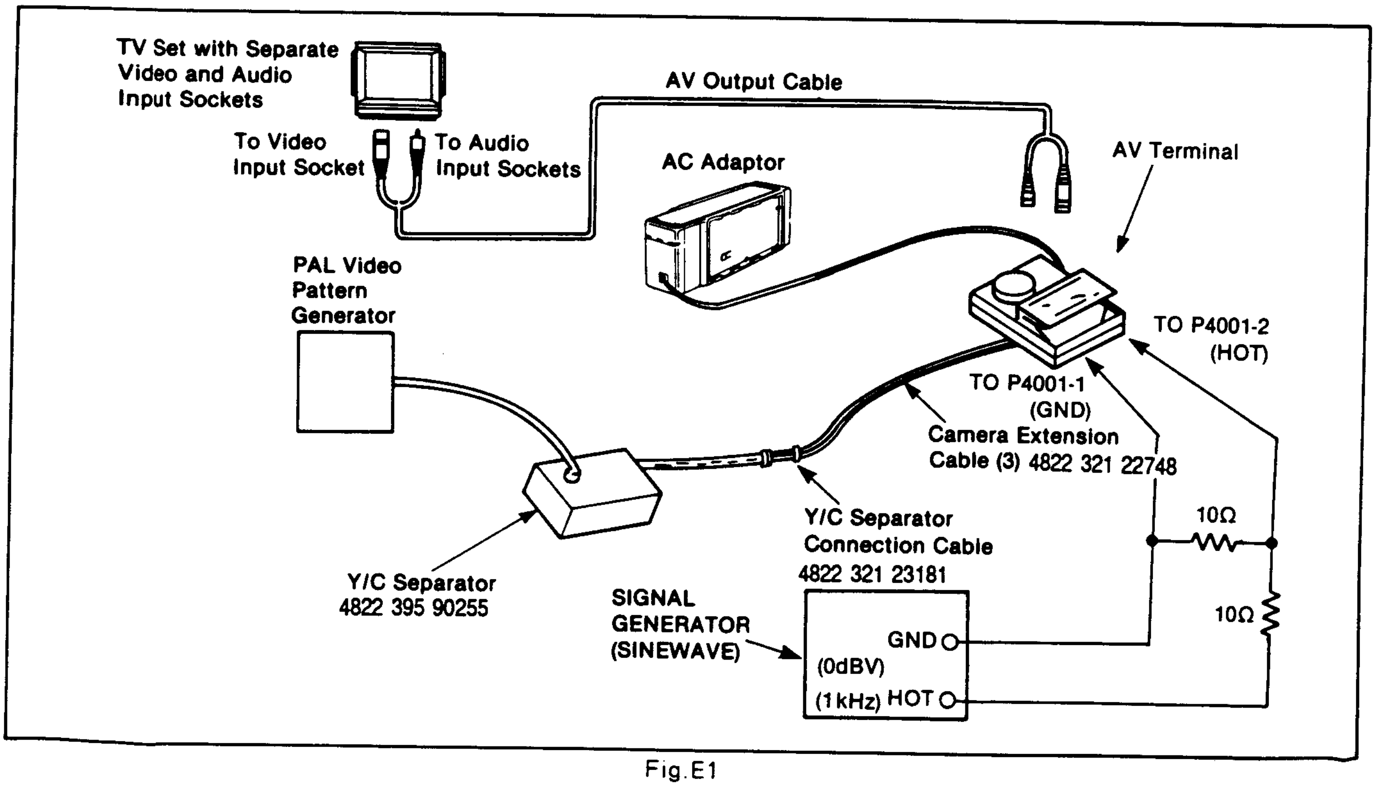

TV Set with Separate Video and Audio Input Sockets
To Video Input Socket
To Audio Input Sockets
AV Output Cable
AC Adaptor
AV Terminal
PAL Video Pattern Generator
TO P4001-2 (HOT)
TO P4001-1 (GND)
Camera Extension Cable (3) 4822 321 22748
Y/C Separator Connection Cable 4822 321 23181
Y/C Separator 4822 395 90255
SIGNAL GENERATOR (SINEWAVE)
GND
(0dBV)
(1kHz) HOT
10Ω
10Ω

Fig.E1

POWER SECTION

1. REG. 5V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1001	VR1001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	4.91±0.025V	

Camera unit should be connected to Main C.B.A. during Power REG. Adjustment.(REG 5V,REG 9V,Camera REG 9V)

2. REG. 9V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1002	VR1002	CAMERA RECORDING	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	8.2+0.1V 8.2−0.05V	

3. CAMERA REG. 9V ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP1003	VR1003	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	$8.6^{+0.07V}_{-0.03V}$	

This adjustment should be always completed after REG. 5V ADJUSTMENT and REG. 9V ADJUSTMENT.

4. UNDER CUT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP6001	VR6001	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE/ DC POWER SUPPLY/ D.V.M.		

Note:

Do not connect AC Adaptor, connect a DC Power Supply to pin 2 (+) and pin 1 (−) of p1001, then supply the voltage 8.64 +− 0.05V.

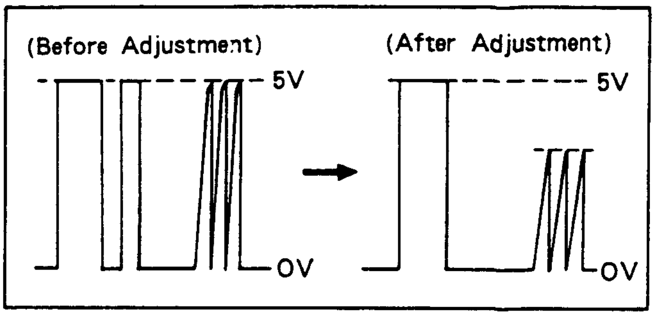

(Before Adjustment)
(After Adjustment)
5V
0V
5V
0V

Fig.E2

SERVO SECTION

5. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 VIDEO OUT	VR2001	PLAY	
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE 4822 397 30186	OSCILLO-SCOPE	6.5H±0.5H	

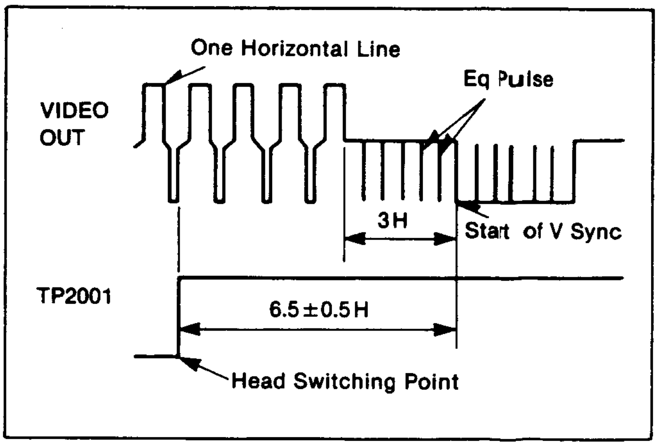

One Horizontal Line
Eq Pulse
VIDEO OUT
3H
Start of V Sync
TP2001
6.5±0.5H
Head Switching Point

Fig.E3

LUMINANCE & CHROMINANCE SECTION

6. E-E LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3003	STOP	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
	OSCILLOSCOPE	A=1.0±0.05Vp-p (75Ω Terminated)	

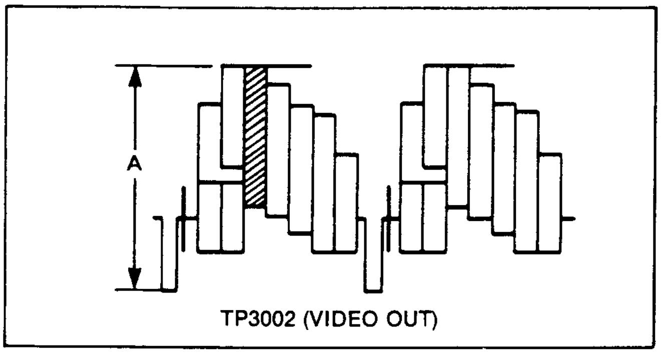


Fig.E4

7. AFC ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP8004	VR8007	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	FREQ. COUNTER	623±15kHz	

1. Connect the jumper wire among TP8002, TP8003 and TP8001 (GND).
2. Connect the frequency counter to TP8004.
3. Adjust the VR8007 so that frequency become 623 +– 15KHz.

8. RECORDING CURRENT ADJUSTMENT

8-1. REC CHROMA LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
P5003-2 (GND) P5003-1 (HOT)	VR8001	REC/PLAY	COLOUR BAR (W/WHITE WINDOW)
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLOSCOPE	28±5mVp-p	

1. Connect the oscilloscope to P5003-2 (GND) and P5003-1 (HOT).
2. Eliminate Luminance signal by turning VR3002.
3. Adjust VR8001 so that Chrominance level becomes 28 +– 5mVp-p.

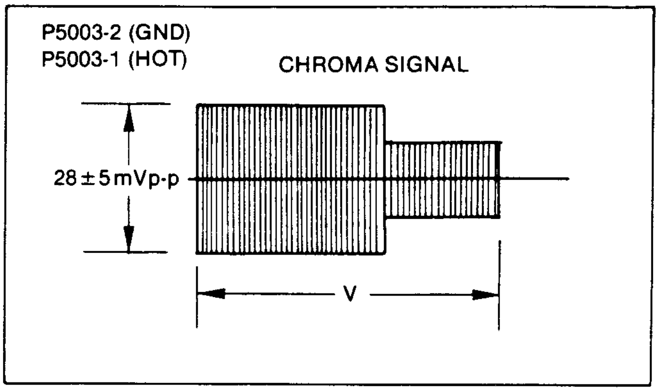


Fig. E5

8-2. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
P5003-2 (GND) P5003-1 (HOT)	VR3002	REC/PLAY	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLOSCOPE	120mV±5mVp-p	

1. Supply colour bar video signal.
2. Adjust VR3002 so that the Luminance level becomes 120 +– 5mVp-p.

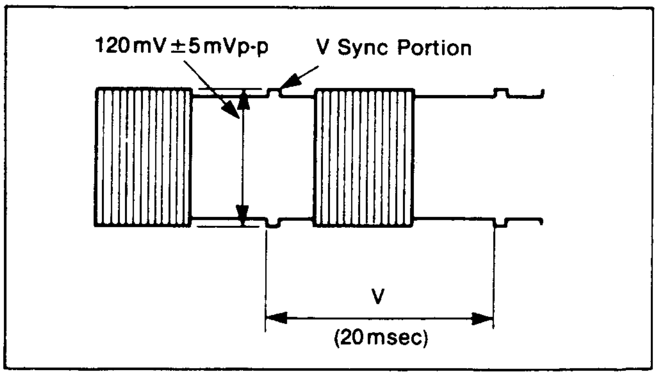


Fig. E6

9. LINE NOISE CANCEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3004	VR3001	SELF RECORDING	☒
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	OSCILLO-SCOPE	Minimum as possible	

1. Record the video signal.
2. Connect the oscilloscope to TP3004.
3. Playback just recorded portion.
4. Adjust VR3001 so that level between sync and white peak becomes minimum as possible.

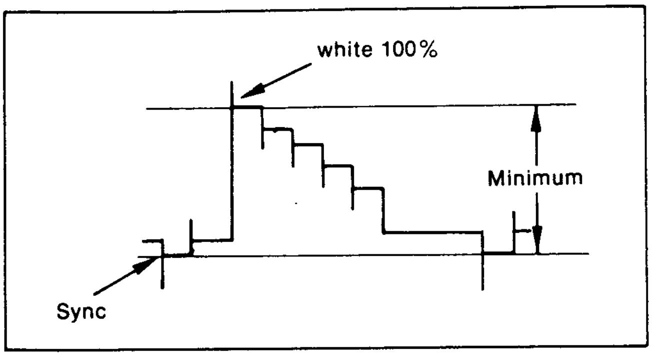


Fig. E7

10. VIDEO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3004	SELF RECORDING (VHS MODE)	COLOUR BAR
TAPE	**M. EQ.**	**SPEC.**	
BLACK TAPE	OSCILLO-SCOPE	A=1.0±0.05Vp-p	

1. Record the colour bar.
2. Connect the oscilloscope to Video out.
3. Adjust the VR3004 so that level becomes A=1.0 +− 0.05Vp−p.

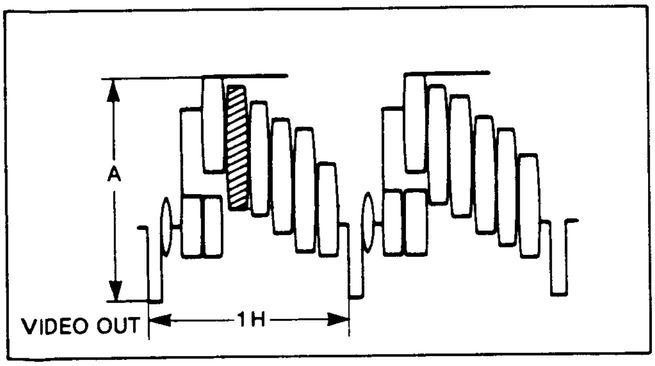


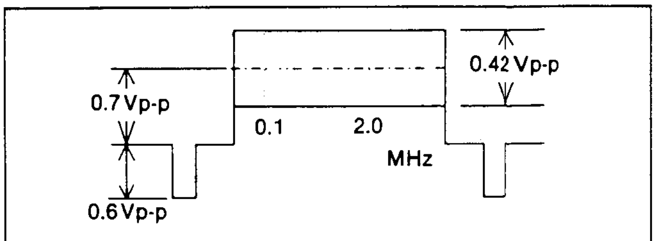
Fig. E8

11. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT	VR3005	SELF RECORDING	VIDEO SWEEP SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	VIDEO SWEEP/ OSCILLO-SCOPE	A: 0±2dB (80~125%)	

Note: Edit switch must be off.

1. Set the sweep generator output as shown below.



CONDITIONS: 1. BURST SIGNAL OFF
2. 75 ohm TERMINATED

Fig. E9

2. Supply the sweep signal to video circuit through the Y/C separator.
3. Record the sweep signal for a few minutes.
4. Play back the just recorded portion.
5. Adjust VR3005 so that the level at 2MHz (A) becomes within specification comparing with the level at 0.1MHz as shown in Fig.E10.

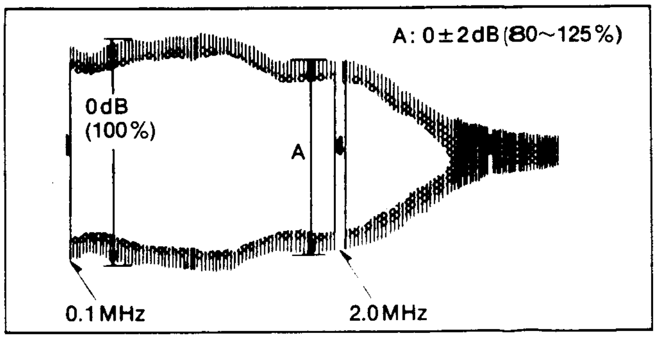


Fig. E10

AUDIO SECTION

12. AUDIO BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002 (HOT) TP4003 (GND)	VR4002	REC/PLAY	
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	D.V.M.	2.7 mVrms ± 0.1 mVrms	

13. AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT	VR4001	SELF RECORDING	1 kHz AUDIO 0dB SIGNAL/ VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
BLANK TAPE	SIGNAL GENERATOR/D.V.M.	−8.0 dBV ± 1 dB	

1. Supply the audio signal (1KHz/0dBV sine wave) to Audio circuit through P4001. (Refer to Fig. E1)
2. Adjust VR4001 so that the level is −8dBV +− 1dB.

SYSTEM CONTROL SECTION

14. CHARACTER POSITION ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIEW FINDER	C6003	STOP	
TAPE	**M. EQ.**	**SPEC.**	
	VIEW FINDER	CHARACTER IS CENTRE	

1. Connect the EVF unit to the VTR unit.
2. Display the battery remaining indicator and counter number on the EVF.
3. Adjust the osc control (C6003) so that the character position is shown below.

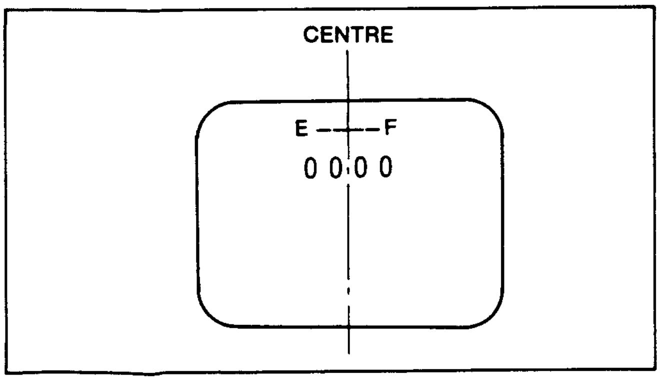
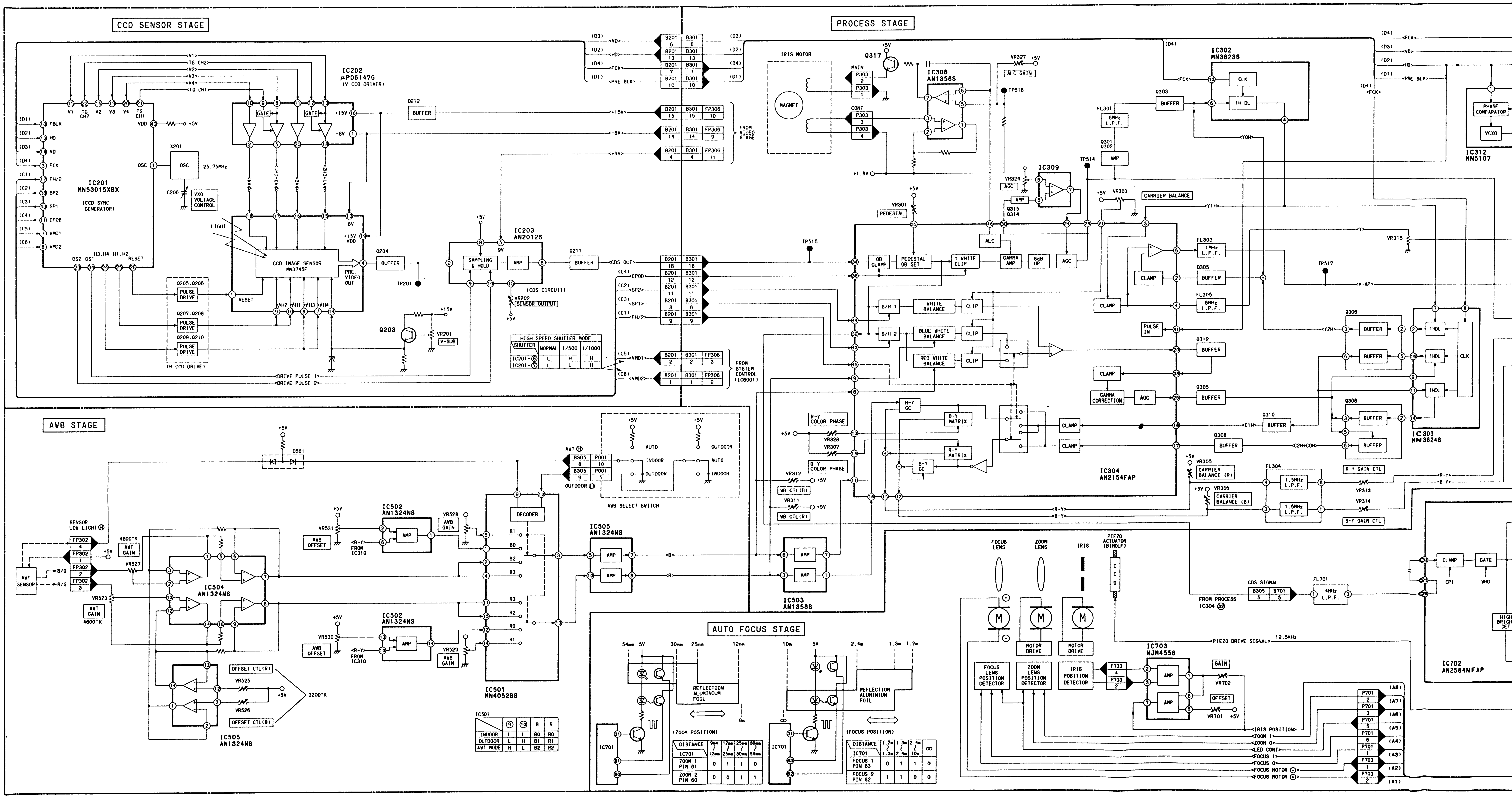
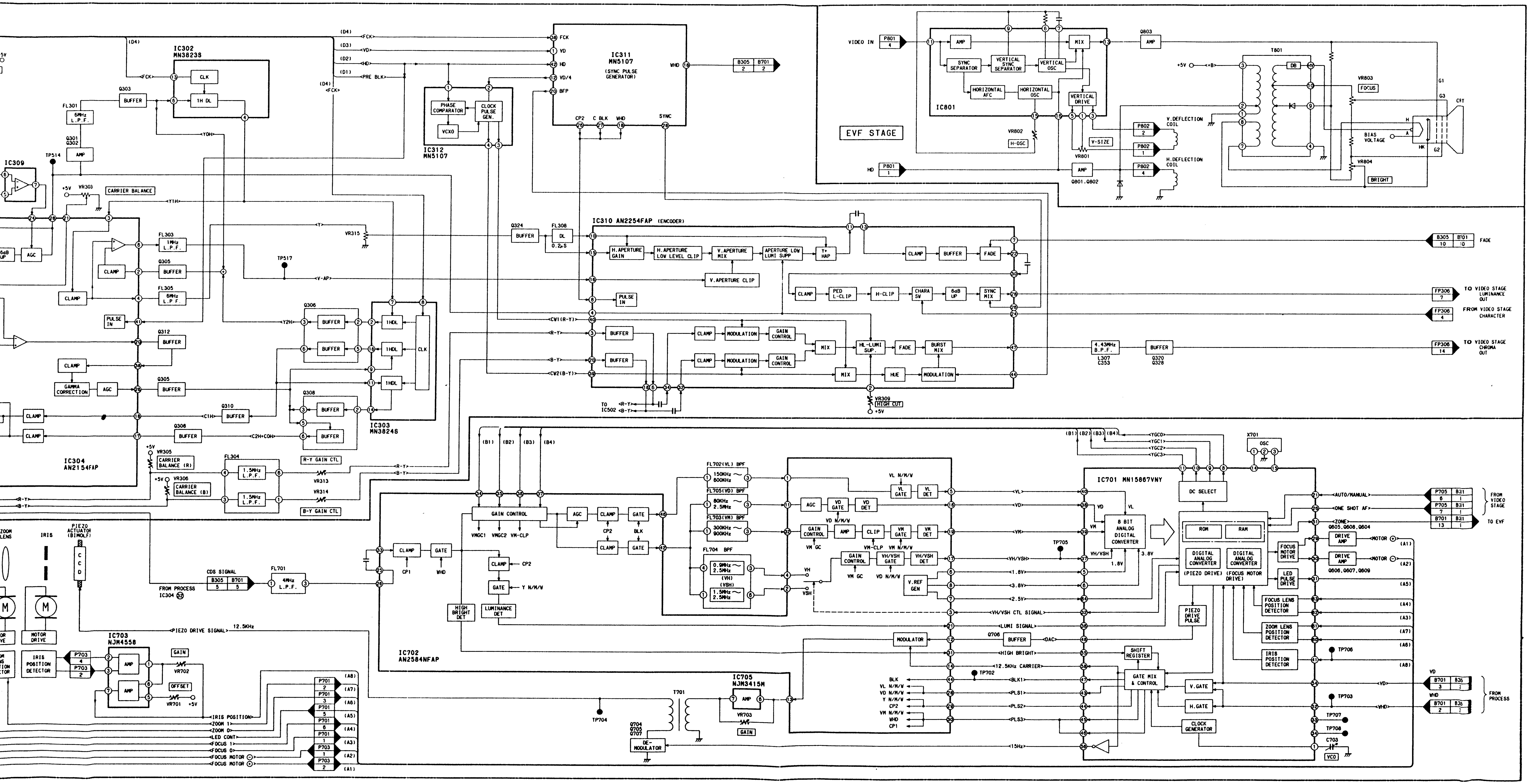


Fig. E11

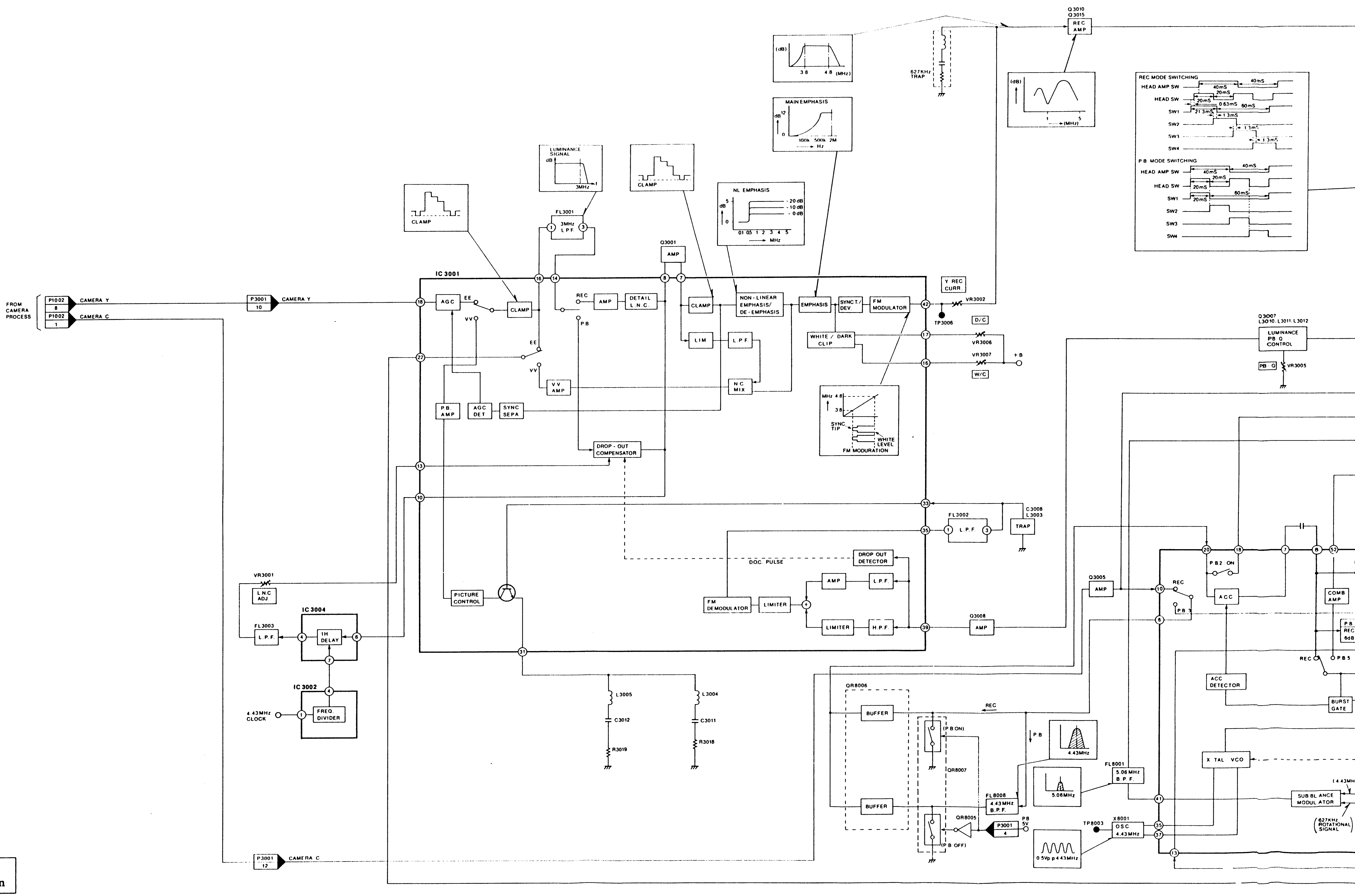
SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. CAMERA STAGE BLOCK DIAGRAM

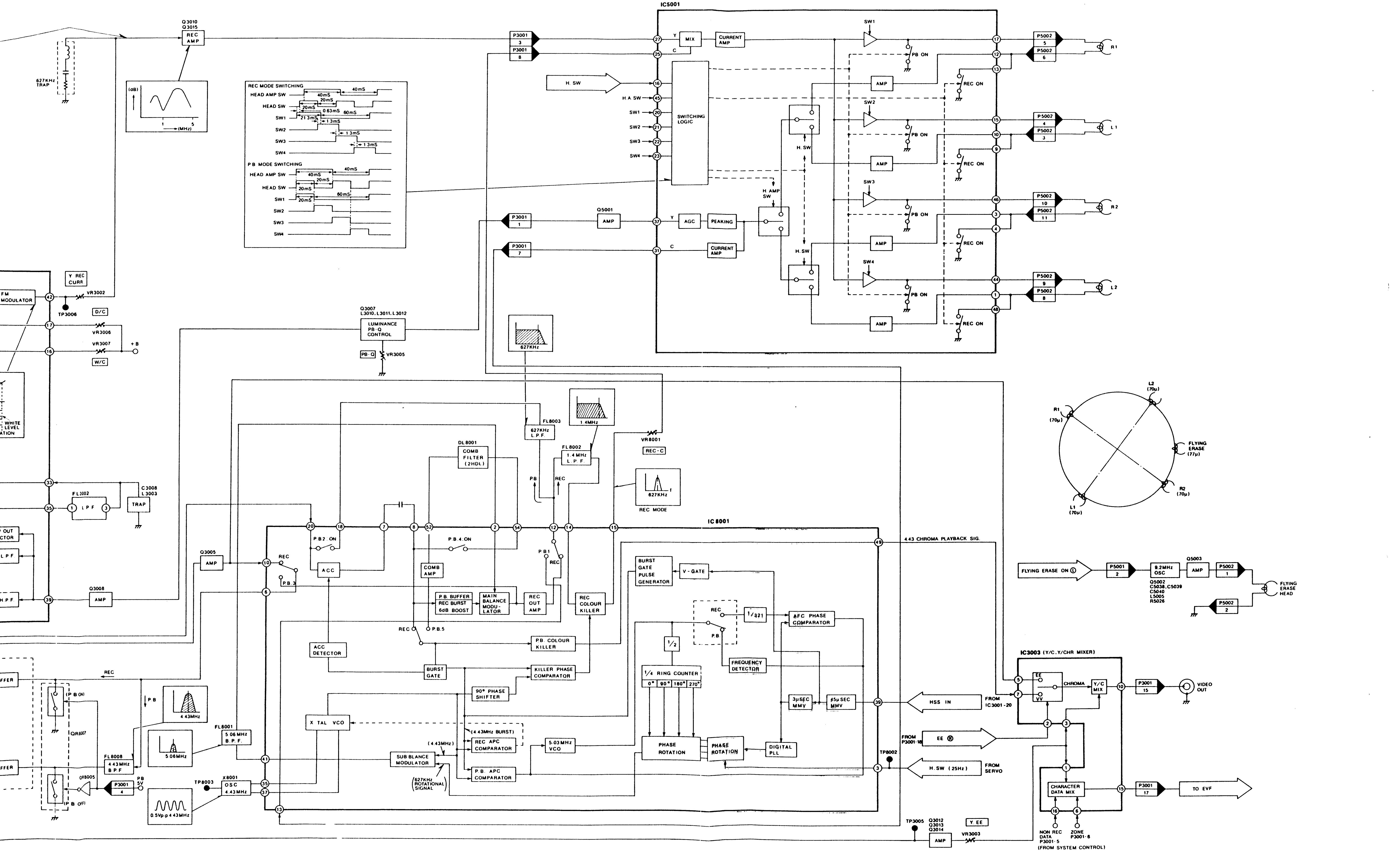

CCD SENSOR STAGE
PROCESS STAGE
AWB STAGE
AUTO FOCUS STAGE
IC201
MN53015XBX
(CCD SYNC GENERATOR)
IC202
μPD6147G
(V.CCD DRIVER)
X201
OSC
25.75MHz
C206
VXO VOLTAGE CONTROL
CCD IMAGE SENSOR
MN3745F
LIGHT
PRE. VIDEO OUT
RESET
Q212
BUFFER
Q204
BUFFER
TP201
IC203
AN2012S
SAMPLING & HOLD
AMP
(CDS CIRCUIT)
VR202
SENSOR OUTPUT
Q211
BUFFER
CDS OUT
Q203
VR201
V-SUB
Q205, Q206
PULSE DRIVE
Q207, Q208
PULSE DRIVE
Q209, Q210
PULSE DRIVE
(H.CCD DRIVE)
DRIVE PULSE 1
DRIVE PULSE 2
HIGH SPEED SHUTTER MODE
SHUTTER
NORMAL
1/500
1/1000
IC201-⑧ L H H
IC201-⑦ L L H
FROM VIDEO STAGE
FROM SYSTEM CONTROL (IC6001)
B201
B301
FP306
GATE
+15V
-8V
+9V
+5V
VD
HD
FCK
PRE BLK
CPOB
SP2
SP1
FH/2
VMD1
VMD2
IRIS MOTOR
MAGNET
MAIN
CONT
P303
Q317
IC308
AN1358S
VR327
ALC GAIN
TP516
IC309
VR324
AGC
AMP
Q315
Q314
VR301
PEDESTAL
ALC
OB CLAMP
PEDESTAL OB SET
Y WHITE CLIP
GAMMA AMP
6dB UP
AGC
TP514
TP515
TP517
VR303
CARRIER BALANCE
FL301
6MHz L.P.F.
Q301
Q302
Q303
BUFFER
IC302
MN3823S
CLK
1H DL
FL303
1MHz L.P.F.
Q305
BUFFER
FL305
6MHz L.P.F.
CLAMP
S/H 1
S/H 2
WHITE BALANCE
BLUE WHITE BALANCE
RED WHITE BALANCE
CLIP
PULSE IN
Q312
BUFFER
GAMMA CORRECTION
R-Y GC
B-Y GC
R-Y MATRIX
B-Y MATRIX
R-Y COLOR PHASE
B-Y COLOR PHASE
VR328
VR307
VR312
WB CTL (B)
VR311
WB CTL (R)
IC304
AN2154FAP
VR305
CARRIER BALANCE (R)
VR306
CARRIER BALANCE (B)
FL304
1.5MHz L.P.F.
R-Y GAIN CTL
B-Y GAIN CTL
VR313
VR314
Q306
Q308
Q310
1HDL
IC303
MN3824S
VR315
IC312
MN5107
PHASE COMPARATOR
VCXO
Y1H
YOH
Y2H
C1H
C2H+COH
V-AP
D501
AVT
B305
P001
INDOOR
OUTDOOR
AUTO
AWB SELECT SWITCH
SENSOR LOW LIGHT
FP302
AVT SENSOR
B/G
R/G
4600°K
AVT GAIN
VR527
VR523
IC504
AN1324NS
IC505
AN1324NS
OFFSET CTL (R)
OFFSET CTL (B)
VR525
VR526
3200°K
IC502
AN1324NS
VR531
AWB OFFSET
VR528
AWB GAIN
FROM IC310
VR530
VR529
DECODER
IC501
MN4052BS
B1 B0 B2 B3 R3 R2 R0 R1
IC503
AN1358S
IC501
⑨ ⑩ B R
INDOOR L L B0 R0
OUTDOOR L H B1 R1
AVT MODE H L B2 R2
FOCUS LENS
ZOOM LENS
IRIS
PIEZO ACTUATOR (BIMOLF)
M
MOTOR DRIVE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IRIS POSITION DETECTOR
P703
IC703
NJM4558
GAIN
VR702
OFFSET
VR701
PIEZO DRIVE SIGNAL
12.5KHz
CDS SIGNAL
FROM PROCESS IC304
B305
B701
FL701
4MHz L.P.F.
CLAMP
GATE
CP1
VHD
IC702
AN2584NFAP
P701
IRIS POSITION
ZOOM 1
ZOOM 0
LED CONT
FOCUS 1
FOCUS 0
FOCUS MOTOR ⊖
FOCUS MOTOR ⊕
(A1) (A2) (A3) (A4) (A5) (A6) (A7) (A8)
54mm 5V 30mm 25mm 12mm
10m 5V 2.4m 1.3m 1.2m
REFLECTION ALUMINIUM FOIL
IC701
(ZOOM POSITION)
DISTANCE 9mm~12mm 12mm~25mm 25mm~30mm 30mm~54mm
ZOOM 1 PIN 61 0 1 1 0
ZOOM 2 PIN 60 0 0 1 1
(FOCUS POSITION)
DISTANCE 1.2m~1.3m 1.3m~2.4m 2.4m~10m ∞
FOCUS 1 PIN 63 0 1 1 0
FOCUS 2 PIN 62 1 1 0 0


IC302
MN3823S
CLK
1H DL
Q303
BUFFER
FL301
6MHz L.P.F.
Q301 Q302
AMP
IC309
TP514
CARRIER BALANCE
VR303
IC311
MN5107
(SYNC PULSE GENERATOR)
FCK
VD
HD
VD/4
BFP
CP2
C BLK
WHD
SYNC
IC312
MN5107
PHASE COMPARATOR
CLOCK PULSE GEN.
VCXO
B305
B701
EVF STAGE
VIDEO IN
P801
AMP
SYNC SEPARATOR
VERTICAL SYNC SEPARATOR
VERTICAL OSC
HORIZONTAL AFC
HORIZONTAL OSC
VERTICAL DRIVE
MIX
IC801
Q803
T801
VR802
H-OSC
VR801
V-SIZE
P802
V.DEFLECTION COIL
H.DEFLECTION COIL
AMP
Q801, Q802
VR803
FOCUS
BIAS VOLTAGE
VR804
BRIGHT
CRT
G1
G3
G2
HK
IC310 AN2254FAP (ENCODER)
Q324
BUFFER
FL308
DL
0.2μS
VR315
H.APERTURE GAIN
H.APERTURE LOW LEVEL CLIP
V.APERTURE MIX
APERTURE LOW LUMI SUPP
Y+ HAP
V.APERTURE CLIP
PULSE IN
CLAMP
FADE
PED L-CLIP
H-CLIP
CHARA SW
6dB UP
SYNC MIX
MODULATION
GAIN CONTROL
HL-LUMI SUP.
BURST MIX
HUE
VR309
HIGH CUT
TO IC502
FADE
FP306
TO VIDEO STAGE LUMINANCE OUT
FROM VIDEO STAGE CHARACTER
TO VIDEO STAGE CHROMA OUT
4.43MHz B.P.F.
L307 C353
Q320 Q328
FL303
1MHz L.P.F.
Q305
FL305
6MHz L.P.F.
TP517
Q306
1HDL
Q312
GAMMA CORRECTION
AGC
Q310
Q308
IC303
MN3824S
IC304
AN2154FAP
VR305
CARRIER BALANCE (R)
VR306
CARRIER BALANCE (B)
FL304
1.5MHz L.P.F.
R-Y GAIN CTL
B-Y GAIN CTL
VR313
VR314
ZOOM LENS
IRIS
PIEZO ACTUATOR (BIMOLF)
CCD
MOTOR DRIVE
IRIS POSITION DETECTOR
FROM PROCESS IC304
CDS SIGNAL
FL701
4MHz L.P.F.
PIEZO DRIVE SIGNAL
12.5KHz
IC703
NJM4558
GAIN
VR702
OFFSET
VR701
P701
P703
IRIS POSITION
ZOOM 1
ZOOM 0
LED CONT
FOCUS 1
FOCUS 0
FOCUS MOTOR ⊕
FOCUS MOTOR ⊖
IC702
AN2584NFAP
GAIN CONTROL
VMGC1
VMGC2
VM-CLP
AGC
CLAMP
GATE
CP2
BLK
CP1
WHD
Y N/M/W
LUMINANCE DET
HIGH BRIGHT DET
FL702(VL) BPF
150KHz 600KHz
FL705(VD) BPF
80KHz 2.5MHz
FL703(VM) BPF
300KHz 900KHz
FL704 BPF
0.9MHz 2.5MHz
(VH)
(VSH)
1.5MHz 2.5MHz
VL N/M/W
VL GATE
VL DET
VD GATE
VD DET
VD N/M/W
VM GC
VM-CLP
VM N/M/W
VM GATE
VM DET
CLIP
VH/VSH GATE
VH/VSH DET
V.REF GEN
VH
VSH
MODULATOR
T701
TP704
Q704 Q705 Q707
DE-MODULATOR
IC705
NJM3415M
VR703
BLK
VL N/M/W
VD N/M/W
Y N/M/W
VM N/M/W
IC701 MN15867VNY
X701
OSC
DC SELECT
8 BIT ANALOG DIGITAL CONVERTER
ROM
RAM
DIGITAL ANALOG CONVERTER (PIEZO DRIVE)
DIGITAL ANALOG CONVERTER (FOCUS MOTOR DRIVE)
PIEZO DRIVE PULSE
SHIFT REGISTER
GATE MIX & CONTROL
CLOCK GENERATOR
V.GATE
H.GATE
FOCUS MOTOR DRIVE
LED PULSE DRIVE
FOCUS LENS POSITION DETECTOR
ZOOM LENS POSITION DETECTOR
IRIS POSITION DETECTOR
DRIVE AMP
Q605, Q608, Q604
Q606, Q607, Q609
TP705
TP706
TP702
TP703
TP707
TP708
C703
VCO
Q706
BUFFER
DAC
AUTO/MANUAL
ONE SHOT AF
ZONE
MOTOR ⊕
MOTOR ⊖
P705
FROM VIDEO STAGE
TO EVF
FROM PROCESS
VH/VSH CTL SIGNAL
LUMI SIGNAL
HIGH BRIGHT
12.5KHz CARRIER
YGC0
YGC1
YGC2
YGC3

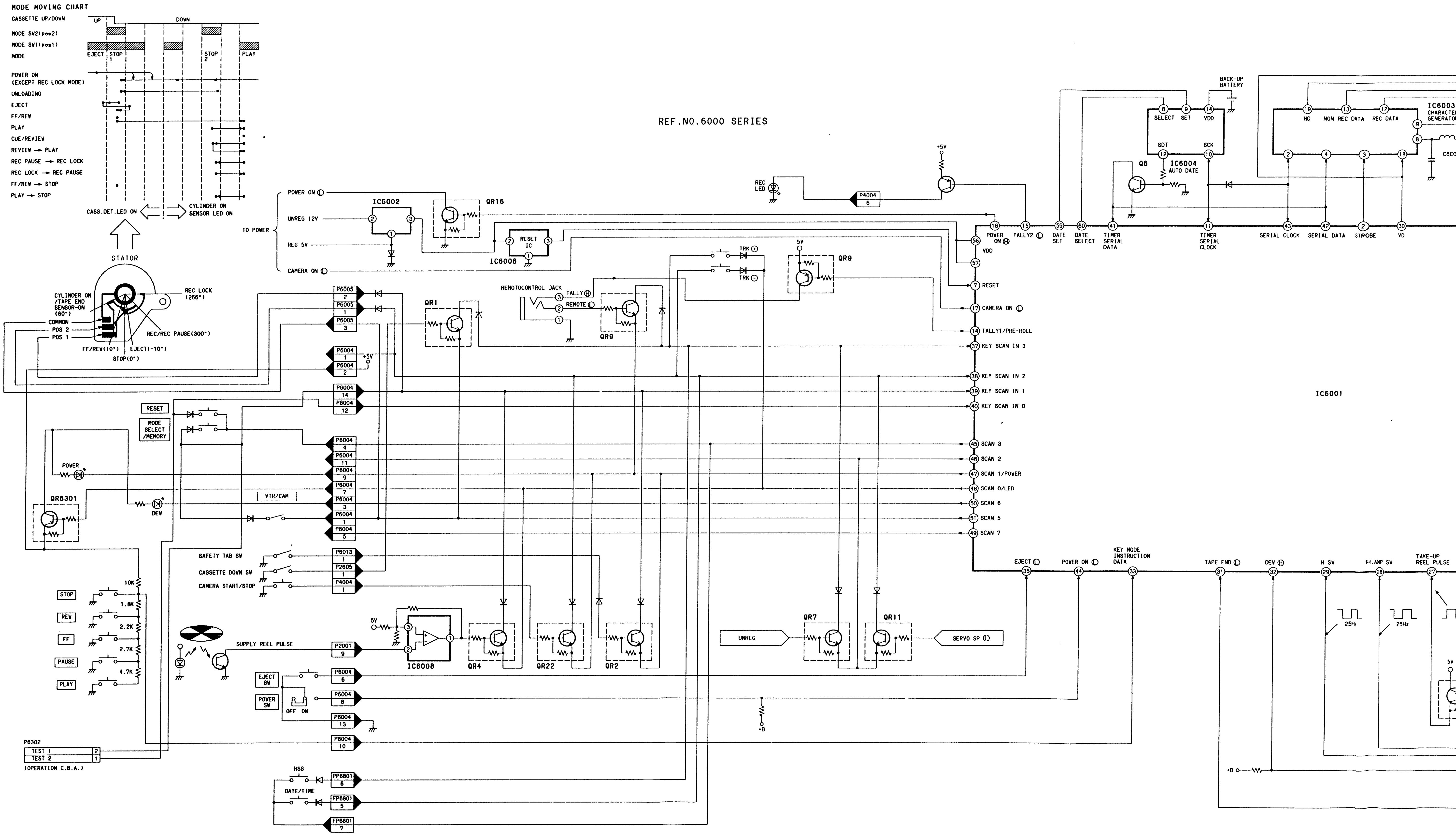
3-2. LUMINANCE & CHROMINANCE BLOCK DIAGRAM


FROM CAMERA PROCESS
P1002 8
CAMERA Y
P1002 1
CAMERA C
P3001 10
CAMERA Y
IC 3001
AGC
EE
VV
CLAMP
FL3001
3MHz L.P.F.
LUMINANCE SIGNAL
dB
3MHz
f
CLAMP
Q3001
AMP
REC
AMP
DETAIL L.N.C.
PB
EE
VV
V.V AMP
P.B. AMP
AGC DET
SYNC SEPA
DROP - OUT COMPENSATOR
PICTURE CONTROL
NON - LINEAR EMPHASIS/ DE - EMPHASIS
LIM
L.P.F.
N.C MIX
NL EMPHASIS
dB
- 20 dB
- 10 dB
- 0 dB
0.1 0.5 1 2 3 4 5
MHz
(dB)
3.8
4.8 (MHz)
MAIN EMPHASIS
dB
12
0
100k 500k 2M
Hz
EMPHASIS
SYNC T./ DEV.
FM MODULATOR
WHITE / DARK CLIP
MHz 4.8
3.8
SYNC. TIP
WHITE LEVEL
FM MODURATION
627KHz TRAP
Q3010
Q3015
REC AMP
(dB)
1
5
(MHz)
Y REC CURR.
VR3002
TP3006
D/C
VR3006
VR3007
+B
W/C
REC MODE SWITCHING
HEAD AMP SW
HEAD SW
SW1
SW2
SW3
SW4
40mS
20mS
0.63mS
60mS
21.3mS
1.3mS
P.B MODE SWITCHING
Q3007
L3010, L3011, L3012
LUMINANCE PB Q CONTROL
PB Q
VR3005
FL3002
L.P.F.
C3008
L3003
TRAP
DROP OUT DETECTOR
D.O.C. PULSE
AMP
L.P.F.
FM DEMODULATOR
LIMITER
LIMITER
H.P.F.
Q3008
AMP
VR3001
L.N.C ADJ
IC 3004
FL3003
L.P.F.
1H DELAY
IC 3002
4.43MHz CLOCK
FREQ. DIVIDER
L3005
C3012
R3019
L3004
C3011
R3018
QR8006
BUFFER
BUFFER
REC
P.B
(P.B:ON)
QR8007
(P.B:OFF)
QR8005
P3001 4
PB 5V
4.43MHz
FL8008
4.43MHz B.P.F.
5.06MHz
FL8001
5.06 MHz B.P.F.
TP8003
X8001
OSC 4.43MHz
0.5Vp-p 4.43MHz
Q3005
AMP
REC
P.B 3
P.B 2 : ON
ACC
ACC DETECTOR
COMB AMP
P.B
REC
6dB
REC
P.B 5
BURST GATE
X TAL VCO
(4.43MH
SUB BL ANCE MODUL ATOR
627KHz ROTATIONAL SIGNAL
P3001 12
CAMERA C

Back Page:
CAMERA STAGE Section

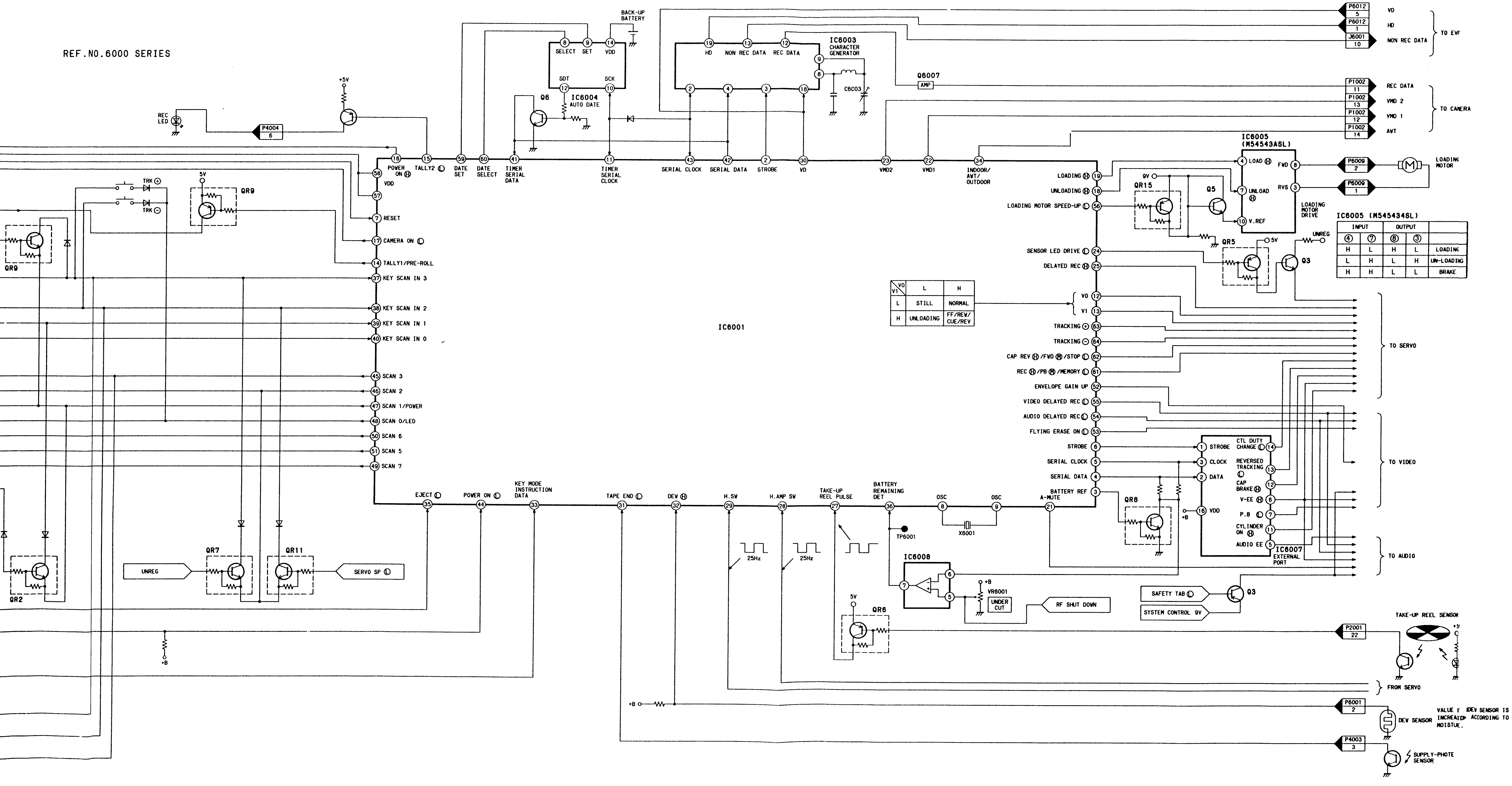

IC5001
Q3010
Q3015
REC AMP
627KHz TRAP
(dB)
(MHz)
P3001 3
P3001 8
MIX
CURRENT AMP
H. SW
H A SW
SW1
SW2
SW3
SW4
SWITCHING LOGIC
REC MODE SWITCHING
HEAD AMP SW
HEAD SW
40mS
20mS
0.63mS
60mS
21.3mS
1.3mS
P.B MODE SWITCHING
P3001 1
P3001 7
Q5001
AMP
AGC
PEAKING
H AMP SW
PB ON
REC ON
P5002 5
P5002 6
P5002 4
P5002 3
P5002 10
P5002 11
P5002 9
P5002 8
R1
L1
R2
L2
Y REC CURR
FM MODULATOR
VR3002
TP3006
D/C
VR3006
VR3007
+B
W/C
WHITE LEVEL
Q3007
L3010, L3011, L3012
LUMINANCE PB-Q CONTROL
PB-Q
VR3005
627KHz
FL8003
627KHz L.P.F.
1.4MHz
FL8002
1.4MHz L.P.F.
VR8001
REC-C
REC MODE
DL8001
COMB FILTER (2HDL)
PB
REC
FL3002
LPF
C3008
L3003
TRAP
Q3005
AMP
Q3008
IC8001
P.B 2 ON
P.B 4 ON
P.B 1
P.B 3
P.B 5
ACC
COMB AMP
P.B BUFFER REC BURST 6dB BOOST
MAIN BALANCE MODULATOR
REC OUT AMP
REC COLOUR KILLER
BURST GATE PULSE GENERATOR
V-GATE
1/321
AFC PHASE COMPARATOR
FREQUENCY DETECTOR
1/2
1/4 RING COUNTER
0° 90° 180° 270°
3μSEC MMV
45μSEC MMV
PHASE ROTATION
DIGITAL PLL
ACC DETECTOR
BURST GATE
P.B. COLOUR KILLER
KILLER PHASE COMPARATOR
90° PHASE SHIFTER
X TAL VCO
(4.43MHz BURST)
REC APC COMPARATOR
(4.43MHz)
5.03MHz VCO
SUB BLANCE MODULATOR
(627KHz ROTATIONAL SIGNAL)
P.B APC COMPARATOR
4.43 CHROMA PLAYBACK SIG.
HSS IN
FROM IC3001-20
EE Ⓗ
FROM P3001-18
H. SW (25Hz)
FROM SERVO
TP8002
TP3005
Q3012
Q3013
Q3014
Y EE
VR3003
AMP
FL8001
5.06MHz B.P.F.
5.06MHz
4.43MHz
FL8008
4.43MHz B.P.F.
X8001
OSC 4.43MHz
TP8003
0.5Vp-p 4.43MHz
QR8007
QR8005
(P.B ON)
(P.B OFF)
P3001 4
PB 5V
BUFFER
REC
OUT DETECTOR
L.P.F
H.P.F
IC3003 (Y/C, Y/CHR MIXER)
EE
VV
CHROMA
Y/C MIX
CHARACTER DATA MIX
P3001 15
VIDEO OUT
P3001 17
TO EVF
NON REC DATA P3001-5
ZONE P3001-6
(FROM SYSTEM CONTROL)
L2 (70μ)
R1 (70μ)
FLYING ERASE (77μ)
R2 (70μ)
L1 (70μ)
FLYING ERASE ON Ⓛ
P5001 2
9.2MHz OSC
Q5003
AMP
P5002 1
P5002 2
Q5002
C5038, C5039
C5040
L5005
R5026
FLYING ERASE HEAD

3-3. SYSTEM CONTROL BLOCK DIAGRAM


MODE MOVING CHART
CASSETTE UP/DOWN
UP
DOWN
MODE SW2(pos2)
MODE SW1(pos1)
MODE
EJECT
STOP 1
STOP 2
PLAY
POWER ON (EXCEPT REC LOCK MODE)
UNLOADING
EJECT
FF/REW
PLAY
CUE/REVIEW
REVIEW → PLAY
REC PAUSE → REC LOCK
REC LOCK → REC PAUSE
FF/REW → STOP
PLAY → STOP
CASS.DET.LED ON
CYLINDER ON SENSOR LED ON
STATOR
CYLINDER ON /TAPE END SENSOR-ON (60°)
COMMON
POS 2
POS 1
REC LOCK (266°)
REC/REC PAUSE(300°)
FF/REW(10°)
EJECT(-10°)
STOP(0°)
REF.NO.6000 SERIES
TO POWER
POWER ON
UNREG 12V
REG 5V
CAMERA ON
IC6002
QR16
RESET IC
IC6006
REC LED
P4004 6
+5V
BACK-UP BATTERY
SELECT
SET
VDD
SDT
SCK
Q6
IC6004 AUTO DATE
HD
NON REC DATA
REC DATA
IC6003 CHARACTER GENERATOR
POWER ON
TALLY2
DATE SET
DATE SELECT
TIMER SERIAL DATA
TIMER SERIAL CLOCK
SERIAL CLOCK
SERIAL DATA
STROBE
VD
VDD
RESET
CAMERA ON
TALLY1/PRE-ROLL
KEY SCAN IN 3
KEY SCAN IN 2
KEY SCAN IN 1
KEY SCAN IN 0
SCAN 3
SCAN 2
SCAN 1/POWER
SCAN 0/LED
SCAN 6
SCAN 5
SCAN 7
IC6001
REMOTOCONTROL JACK
TALLY
REMOTE
QR9
TRK +
TRK −
5V
QR1
P6005
P6004
P6013
P2605
P2001
RESET
MODE SELECT /MEMORY
POWER
QR6301
DEV
VTR/CAM
SAFETY TAB SW
CASSETTE DOWN SW
CAMERA START/STOP
STOP
REW
FF
PAUSE
PLAY
10K
1.8K
2.2K
2.7K
4.7K
SUPPLY REEL PULSE
IC6008
QR4
QR22
QR2
UNREG
QR7
QR11
SERVO SP
EJECT SW
POWER SW
OFF ON
+B
P6302
TEST 1
TEST 2
(OPERATION C.B.A.)
HSS
DATE/TIME
FP6801
EJECT
POWER ON
KEY MODE INSTRUCTION DATA
TAPE END
DEV
H.SW
H.AMP SW
TAKE-UP REEL PULSE
25Hz
25Hz
5V
+B

SYSTEM CONTROL Section

REF.NO.6000 SERIES


REC LED
P4004
6
+5V
BACK-UP BATTERY
SELECT
SET
VDD
SDT
SCK
Q6
IC6004
AUTO DATE
HD
NON REC DATA
REC DATA
IC6003
CHARACTER GENERATOR
C6C03
Q6007
AMP
P6012
5
P6012
1
J6001
10
VD
HD
NON REC DATA
TO EVF
P1002
11
P1002
13
P1002
12
P1002
14
REC DATA
VMD 2
VMD 1
AVT
TO CAMERA
IC6005
(M54543ASL)
LOAD Ⓗ
UNLOAD Ⓗ
V.REF
FWD
RVS
LOADING MOTOR DRIVE
P6009
2
P6009
1
LOADING MOTOR
TRK ⊕
TRK ⊖
5V
QR9
QR9
POWER ON Ⓗ
TALLY2 Ⓛ
DATE SET
DATE SELECT
TIMER SERIAL DATA
TIMER SERIAL CLOCK
SERIAL CLOCK
SERIAL DATA
STROBE
VD
VMD2
VMD1
INDOOR/ AVT/ OUTDOOR
VDD
RESET
CAMERA ON Ⓛ
TALLY1/PRE-ROLL
KEY SCAN IN 3
KEY SCAN IN 2
KEY SCAN IN 1
KEY SCAN IN 0
SCAN 3
SCAN 2
SCAN 1/POWER
SCAN 0/LED
SCAN 6
SCAN 5
SCAN 7
IC6001
LOADING Ⓗ
UNLOADING Ⓗ
LOADING MOTOR SPEED-UP Ⓛ
9V
QR15
Q5
SENSOR LED DRIVE Ⓛ
DELAYED REC Ⓗ
QR5
5V
UNREG
Q3
VO
V1
TRACKING ⊕
TRACKING ⊖
CAP REV Ⓗ/FWD Ⓜ/STOP Ⓛ
REC Ⓗ/PB Ⓜ/MEMORY Ⓛ
ENVELOPE GAIN UP
VIDEO DELAYED REC Ⓛ
AUDIO DELAYED REC Ⓛ
FLYING ERASE ON Ⓛ
STROBE
SERIAL CLOCK
SERIAL DATA
BATTERY REF
A-MUTE
TO SERVO
TO VIDEO
TO AUDIO
STROBE
CLOCK
DATA
VDD
+B
CTL DUTY CHANGE Ⓛ
REVERSED TRACKING Ⓛ
CAP BRAKE Ⓗ
V-EE Ⓗ
P.B Ⓛ
CYLINDER ON Ⓗ
AUDIO EE
IC6007
EXTERNAL PORT
QR8
EJECT Ⓛ
POWER ON Ⓛ
KEY MODE INSTRUCTION DATA
TAPE END Ⓛ
DEW Ⓗ
H.SW
H.AMP SW
TAKE-UP REEL PULSE
BATTERY REMAINING DET
OSC
OSC
X6001
TP6001
25Hz
25Hz
IC6008
+B
VR6001
UNDER CUT
RF SHUT DOWN
SAFETY TAB Ⓛ
SYSTEM CONTROL 9V
Q3
QR2
QR7
QR11
UNREG
SERVO SP Ⓛ
5V
QR6
+B
+B
TAKE-UP REEL SENSOR
+5V
P2001
22
FROM SERVO
P6001
2
DEW SENSOR
VALUE OF DEW SENSOR IS INCREASED ACCORDING TO MOISTURE.
P4003
3
SUPPLY-PHOTE SENSOR

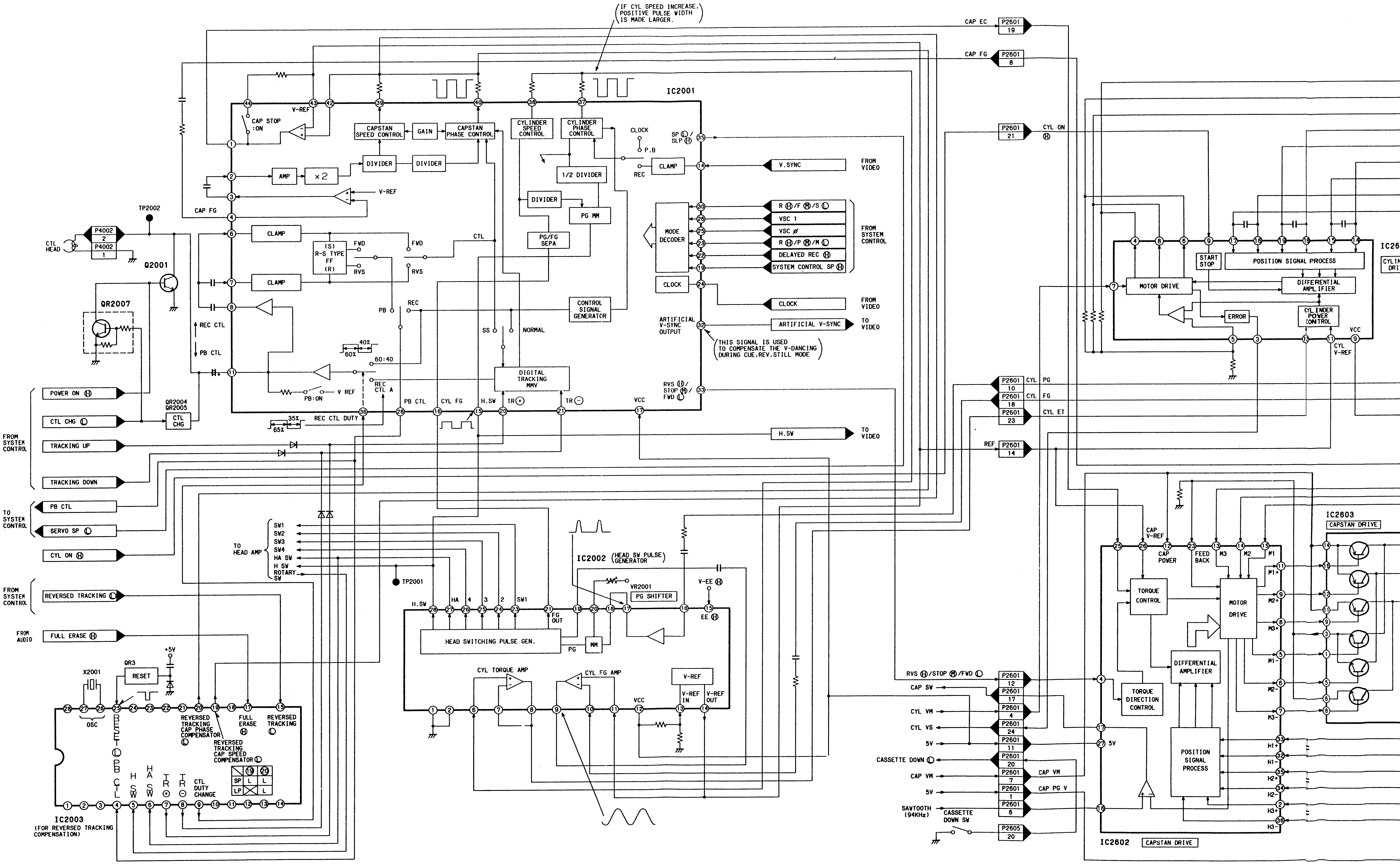
V1 \ VO	L	H
L	STILL	NORMAL
H	UNLOADING	FF/REW/ CUE/REV

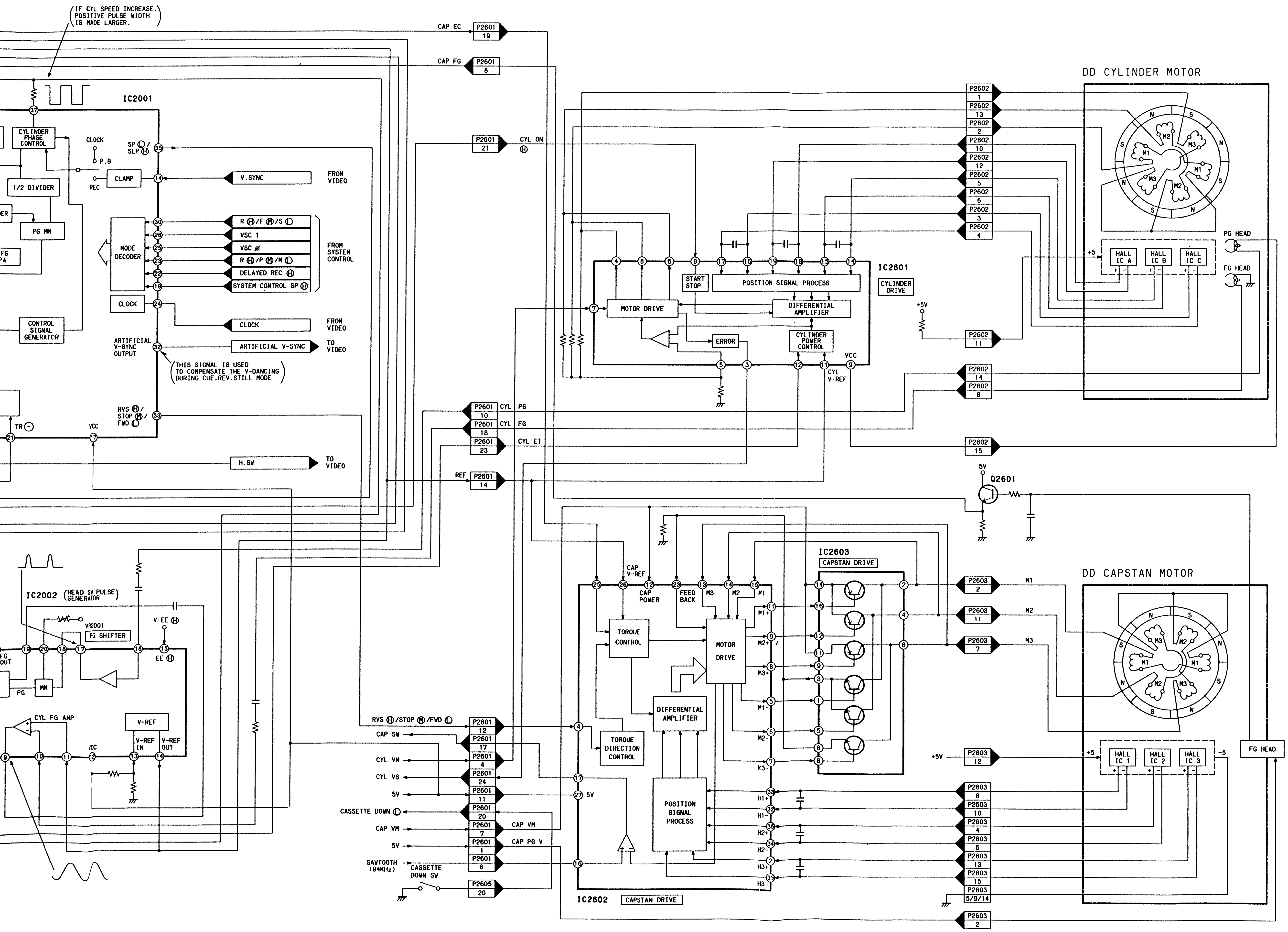
IC6005 (M545434SL)

INPUT		OUTPUT		
④	⑦	⑧	③	
H	L	H	L	LOADING
L	H	L	H	UN-LOADING
H	H	L	L	BRAKE

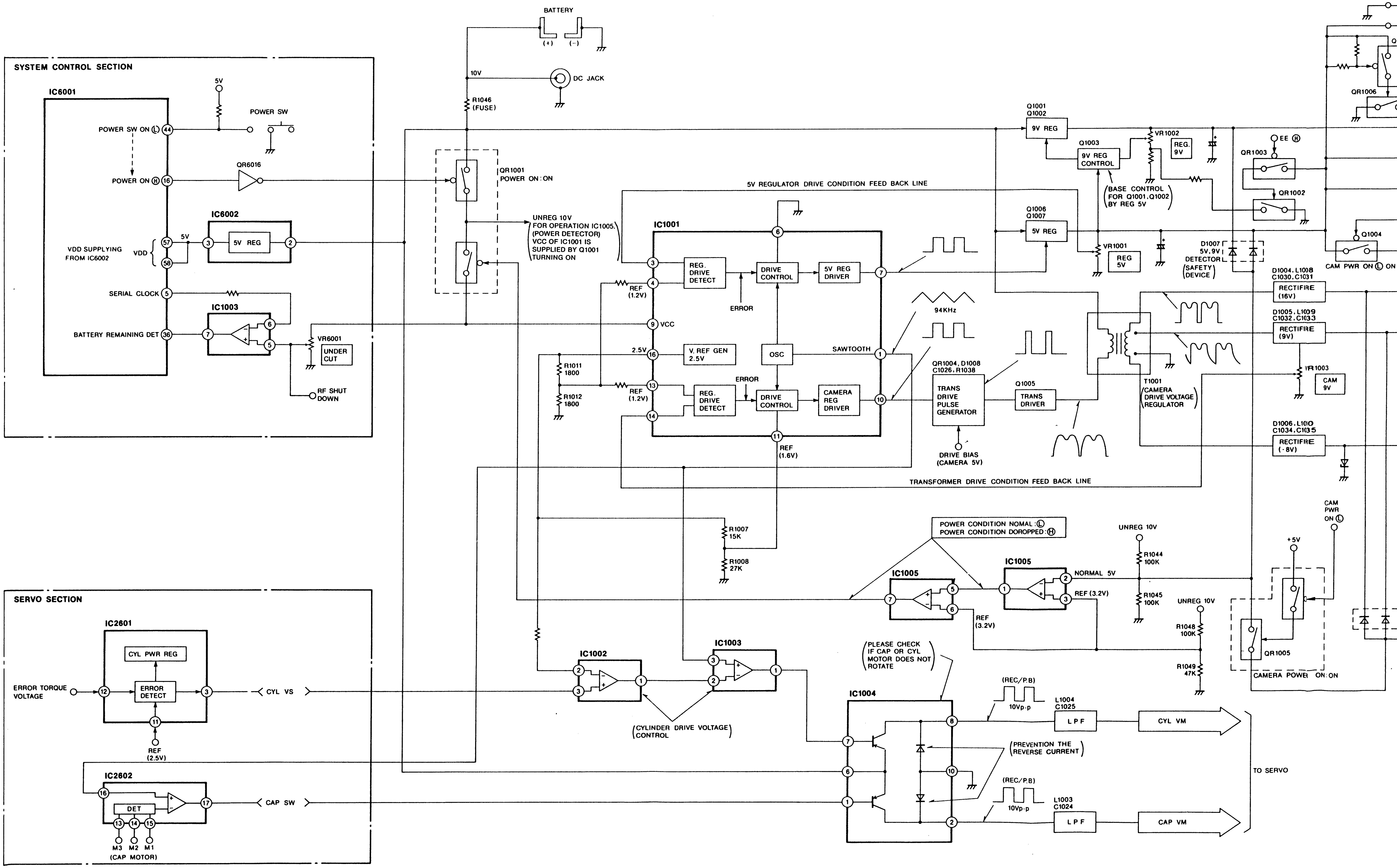
Next Page :
SERVO Section

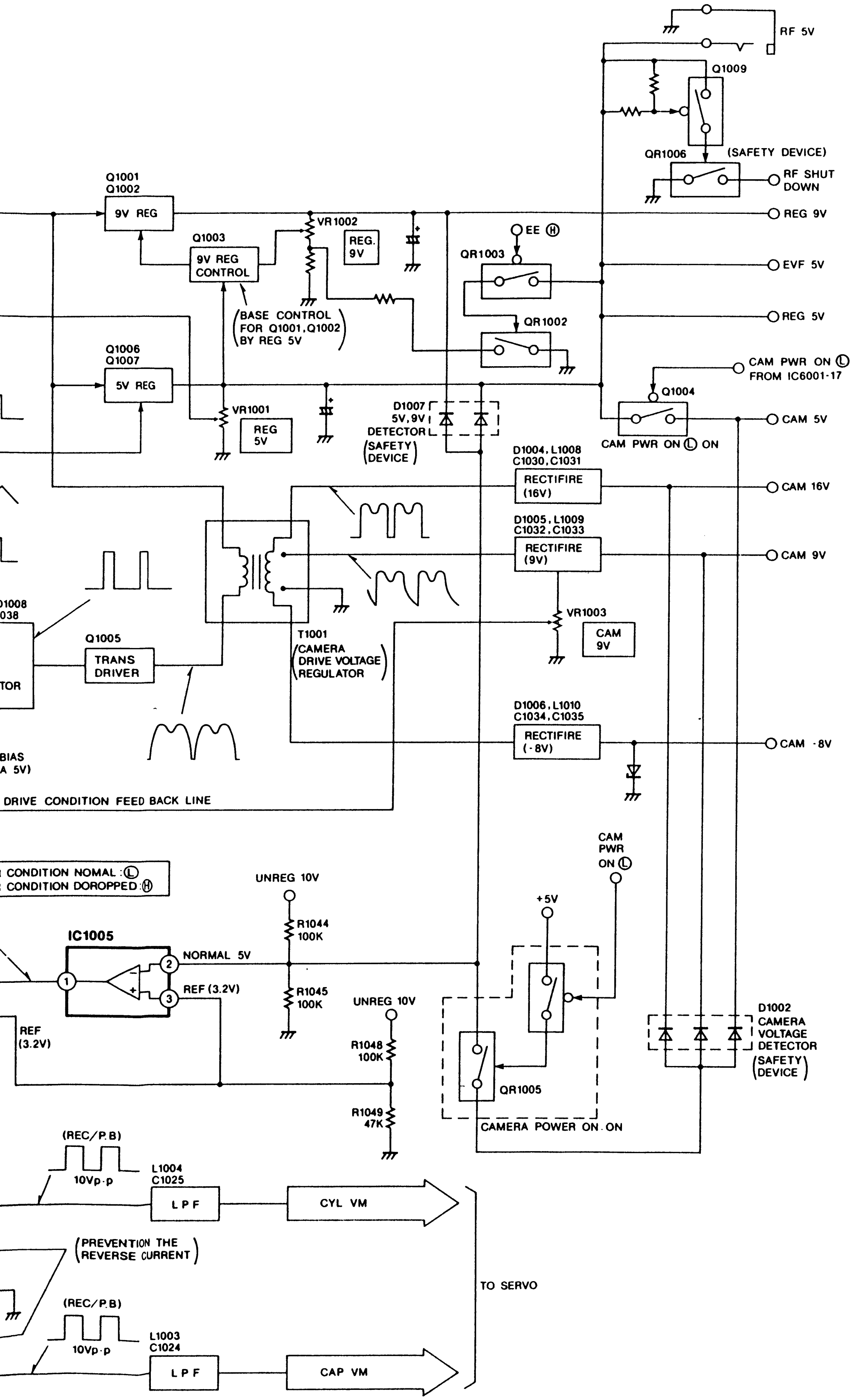
3-4. SERVO BLOCK DIAGRAM


IF CYL SPEED INCREASE, POSITIVE PULSE WIDTH IS MADE LARGER.
IC2001
CAP STOP :ON
V-REF
CAPSTAN SPEED CONTROL
GAIN
CAPSTAN PHASE CONTROL
CYLINDER SPEED CONTROL
CYLINDER PHASE CONTROL
CLOCK
P.B
REC
SP Ⓛ/ SLP Ⓗ
CLAMP
V.SYNC
FROM VIDEO
AMP
×2
DIVIDER
DIVIDER
1/2 DIVIDER
DIVIDER
PG MM
PG/FG SEPA
CAP FG
TP2002
CTL HEAD
P4002 2
P4002 1
Q2001
QR2007
CLAMP
(S) R-S TYPE FF (R)
FWD
RVS
FWD
RVS
CTL
CLAMP
MODE DECODER
R Ⓗ/F Ⓜ/S Ⓛ
VSC 1
VSC ø
R Ⓗ/P Ⓜ/M Ⓛ
DELAYED REC Ⓗ
SYSTEM CONTROL SP Ⓗ
FROM SYSTEM CONTROL
CLOCK
CLOCK
FROM VIDEO
REC CTL
PB CTL
PB
REC
CONTROL SIGNAL GENERATOR
SS
NORMAL
ARTIFICIAL V-SYNC OUTPUT
ARTIFICIAL V-SYNC
TO VIDEO
THIS SIGNAL IS USED TO COMPENSATE THE V-DANCING DURING CUE.REV.STILL MODE
40%
60%
60:40
PB:ON
V REF
REC CTL A
DIGITAL TRACKING MMV
RVS Ⓗ/ STOP Ⓜ/ FWD Ⓛ
35%
65%
REC CTL DUTY
PB CTL
CYL FG
H.SW
TR⊕
TR⊖
VCC
POWER ON Ⓗ
CTL CHG Ⓛ
QR2004 QR2005
CTL CHG
FROM SYSTEM CONTROL
TRACKING UP
TRACKING DOWN
H.SW
TO VIDEO
TO SYSTEM CONTROL
PB CTL
SERVO SP Ⓛ
CYL ON Ⓗ
FROM SYSTEM CONTROL
REVERSED TRACKING Ⓛ
FROM AUDIO
FULL ERASE Ⓗ
TO HEAD AMP
SW1
SW2
SW3
SW4
HA SW
H SW
ROTARY SW
TP2001
IC2002 (HEAD SW PULSE GENERATOR)
VR2001
PG SHIFTER
V-EE Ⓗ
EE Ⓗ
H.SW
HA
4
3
2
SW1
FG OUT
HEAD SWITCHING PULSE GEN.
PG
MM
CYL TORQUE AMP
CYL FG AMP
V-REF
VCC
V-REF IN
V-REF OUT
+5V
X2001
QR3
RESET
OSC
RESET
Ⓛ PB CTL
H SW
HA SW
TR ⊕
TR ⊖
CTL DUTY CHANGE
REVERSED TRACKING CAP PHASE COMPENSATOR Ⓛ
REVERSED TRACKING CAP SPEED COMPENSATOR Ⓛ
FULL ERASE Ⓗ
REVERSED TRACKING Ⓛ
19
20
SP L L
LP L
IC2003 (FOR REVERSED TRACKING COMPENSATION)
CAP EC
P2601 19
CAP FG
P2601 8
P2601 21
CYL ON Ⓗ
P2601 10 CYL PG
P2601 18 CYL FG
P2601 23 CYL ET
REF
P2601 14
IC26
START STOP
POSITION SIGNAL PROCESS
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
ERROR
CYLINDER POWER CONTROL
CYLIN DRI
VCC
CYL V-REF
CAP V-REF
CAP POWER
FEED BACK
M3
M2
M1
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE DIRECTION CONTROL
POSITION SIGNAL PROCESS
5V
IC2603
CAPSTAN DRIVE
M1+
M2+
M3+
M1-
M2-
M3-
H1+
H1-
H2+
H2-
H3+
H3-
RVS Ⓗ/STOP Ⓜ/FWD Ⓛ
CAP SW
CYL VM
CYL VS
5V
CASSETTE DOWN Ⓛ
CAP VM
5V
SAWTOOTH (94KHz)
P2601 12
P2601 17
P2601 4
P2601 24
P2601 11
P2601 20
P2601 7
P2601 1
P2601 6
CAP VM
CAP PG V
CASSETTE DOWN SW
P2605 20
IC2602
CAPSTAN DRIVE

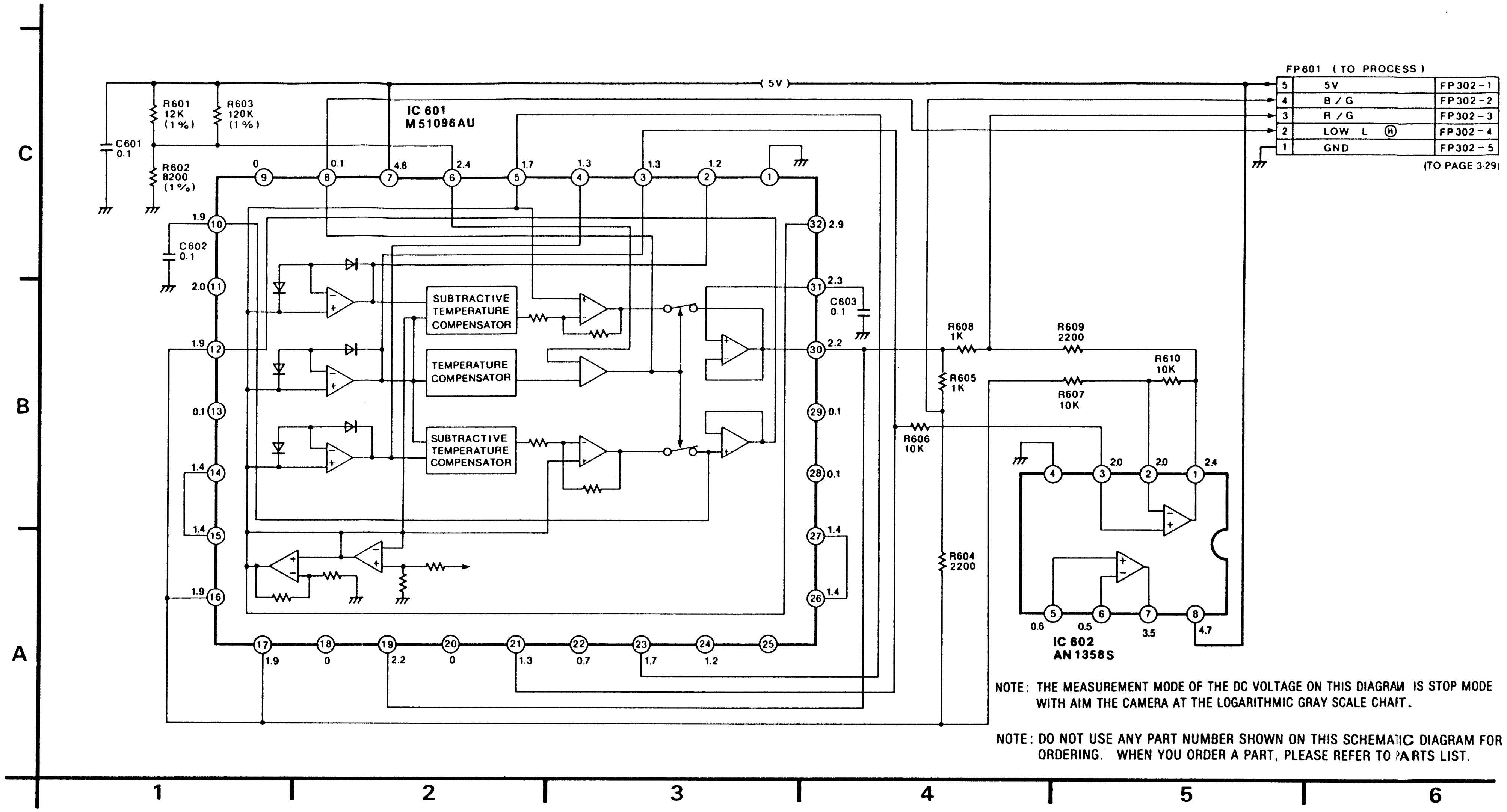

IF CYL SPEED INCREASE. POSITIVE PULSE WIDTH IS MADE LARGER.
IC2001
CYLINDER PHASE CONTROL
CLOCK
P.B
REC
SP / SLP
CLAMP
1/2 DIVIDER
PG MM
MODE DECODER
V.SYNC
FROM VIDEO
R Ⓗ/F Ⓜ/S Ⓛ
VSC 1
VSC ø
R Ⓗ/P Ⓜ/M Ⓛ
DELAYED REC Ⓗ
SYSTEM CONTROL SP Ⓗ
FROM SYSTEM CONTROL
CLOCK
CONTROL SIGNAL GENERATOR
ARTIFICIAL V-SYNC OUTPUT
ARTIFICIAL V-SYNC
TO VIDEO
THIS SIGNAL IS USED TO COMPENSATE THE V-DANCING DURING CUE.REV.STILL MODE
RVS Ⓗ/ STOP Ⓜ/ FWD Ⓛ
TR
VCC
H.SW
TO VIDEO
IC2002 (HEAD SW PULSE GENERATOR)
VR2001
PG SHIFTER
V-EE Ⓗ
EE Ⓗ
FG OUT
PG
MM
CYL FG AMP
V-REF
V-REF IN
V-REF OUT
VCC
CAP EC
P2601 19
CAP FG
P2601 8
P2601 21
CYL ON Ⓗ
P2601 10 CYL PG
P2601 18 CYL FG
P2601 23 CYL ET
REF
P2601 14
DD CYLINDER MOTOR
P2602 1
P2602 13
P2602 2
P2602 10
P2602 12
P2602 5
P2602 6
P2602 3
P2602 4
N S M1 M2 M3
HALL IC A
HALL IC B
HALL IC C
PG HEAD
FG HEAD
+5
IC2601
CYLINDER DRIVE
START STOP
POSITION SIGNAL PROCESS
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
ERROR
CYLINDER POWER CONTROL
VCC
CYL V-REF
+5V
P2602 11
P2602 14
P2602 8
P2602 15
5V
Q2601
IC2603
CAPSTAN DRIVE
DD CAPSTAN MOTOR
P2603 2 M1
P2603 11 M2
P2603 7 M3
CAP V-REF
CAP POWER
FEED BACK
M3
M2
M1
M1+
M2+
M3+
M1-
M2-
M3-
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE DIRECTION CONTROL
POSITION SIGNAL PROCESS
5V
H1+
H1-
H2+
H2-
H3+
H3-
+5V
P2603 12
HALL IC 1
HALL IC 2
HALL IC 3
-5
FG HEAD
P2603 8
P2603 10
P2603 4
P2603 6
P2603 13
P2603 15
P2603 5/9/14
P2603 2
RVS Ⓗ/STOP Ⓜ/FWD Ⓛ
P2601 12
CAP SW
P2601 17
CYL VM
P2601 4
CYL VS
P2601 24
5V
P2601 11
CASSETTE DOWN Ⓛ
P2601 20
CAP VM
P2601 7 CAP VM
5V
P2601 1 CAP PG V
SAWTOOTH (94KHz)
P2601 6
CASSETTE DOWN SW
P2605 20
IC2602
CAPSTAN DRIVE

3-5. POWER SUPPLY BLOCK DIAGRAM


BATTERY
(+)
(−)
10V
DC JACK
R1046
(FUSE)
SYSTEM CONTROL SECTION
IC6001
5V
POWER SW
POWER SW ON Ⓛ 44
POWER ON Ⓗ 16
QR6016
QR1001
POWER ON : ON
IC6002
5V REG
VDD SUPPLYING FROM IC6002
VDD
57
58
5V
3
2
UNREG 10V
FOR OPERATION IC1005
(POWER DETECTOR)
VCC OF IC1001 IS
SUPPLIED BY Q1001
TURNING ON
SERIAL CLOCK 5
IC1003
BATTERY REMAINING DET 36
7
6
5
VR6001
UNDER CUT
RF SHUT DOWN
5V REGULATOR DRIVE CONDITION FEED BACK LINE
IC1001
REG. DRIVE DETECT
DRIVE CONTROL
5V REG DRIVER
ERROR
REF (1.2V)
VCC
OSC
SAWTOOTH
V. REF GEN 2.5V
2.5V
R1011 1800
R1012 1800
REF (1.2V)
REG. DRIVE DETECT
DRIVE CONTROL
CAMERA REG DRIVER
REF (1.6V)
94KHz
QR1004, D1008
C1026, R1038
TRANS DRIVE PULSE GENERATOR
DRIVE BIAS (CAMERA 5V)
Q1005
TRANS DRIVER
TRANSFORMER DRIVE CONDITION FEED BACK LINE
Q1001
Q1002
9V REG
Q1003
9V REG CONTROL
VR1002
REG. 9V
(BASE CONTROL FOR Q1001, Q1002 BY REG 5V)
Q1006
Q1007
5V REG
VR1001
REG 5V
D1007
5V, 9V
DETECTOR
(SAFETY DEVICE)
EE Ⓗ
QR1003
QR1002
QR1006
Q1004
CAM PWR ON Ⓛ ON
D1004, L1008
C1030, C1031
RECTIFIRE (16V)
D1005, L1009
C1032, C1033
RECTIFIRE (9V)
VR1003
CAM 9V
T1001
(CAMERA DRIVE VOLTAGE REGULATOR)
D1006, L1010
C1034, C1035
RECTIFIRE (-8V)
CAM PWR ON Ⓛ
POWER CONDITION NOMAL : Ⓛ
POWER CONDITION DOROPPED : Ⓗ
UNREG 10V
R1007 15K
R1008 27K
IC1005
IC1005
NORMAL 5V
REF (3.2V)
REF (3.2V)
R1044 100K
R1045 100K
UNREG 10V
R1048 100K
R1049 47K
+5V
QR1005
CAMERA POWER ON : ON
SERVO SECTION
IC2601
CYL PWR REG
ERROR DETECT
ERROR TORQUE VOLTAGE
REF (2.5V)
CYL VS
IC1002
IC1003
(CYLINDER DRIVE VOLTAGE CONTROL)
(PLEASE CHECK IF CAP OR CYL MOTOR DOES NOT ROTATE)
IC1004
(REC/P.B)
10Vp-p
L1004
C1025
LPF
CYL VM
(PREVENTION THE REVERSE CURRENT)
(REC/P.B)
10Vp-p
L1003
C1024
LPF
CAP VM
TO SERVO
IC2602
DET
CAP SW
M3 M2 M1
(CAP MOTOR)


RF 5V
Q1009
QR1006
(SAFETY DEVICE)
RF SHUT DOWN
Q1001
Q1002
9V REG
VR1002
REG. 9V
EE Ⓗ
REG 9V
Q1003
9V REG CONTROL
QR1003
EVF 5V
BASE CONTROL FOR Q1001,Q1002 BY REG 5V
QR1002
REG 5V
Q1006
Q1007
5V REG
VR1001
REG 5V
D1007
5V,9V DETECTOR
(SAFETY DEVICE)
CAM PWR ON Ⓛ FROM IC6001-17
Q1004
CAM PWR ON Ⓛ ON
CAM 5V
D1004, L1008 C1030, C1031
RECTIFIRE (16V)
CAM 16V
D1005, L1009 C1032, C1033
RECTIFIRE (9V)
CAM 9V
VR1003
CAM 9V
Q1005
TRANS DRIVER
T1001
(CAMERA DRIVE VOLTAGE REGULATOR)
D1006, L1010 C1034, C1035
RECTIFIRE (-8V)
CAM -8V
BIAS
DRIVE CONDITION FEED BACK LINE
CONDITION NOMAL : Ⓛ
CONDITION DOROPPED : Ⓗ
UNREG 10V
R1044 100K
R1045 100K
UNREG 10V
R1048 100K
R1049 47K
CAM PWR ON Ⓛ
+5V
IC1005
NORMAL 5V
REF (3.2V)
REF (3.2V)
QR1005
CAMERA POWER ON ON
D1002 CAMERA VOLTAGE DETECTOR (SAFETY DEVICE)
(REC/P.B)
10Vp-p
L1004 C1025
LPF
CYL VM
(PREVENTION THE REVERSE CURRENT)
TO SERVO
(REC/P.B)
10Vp-p
L1003 C1024
LPF
CAP VM

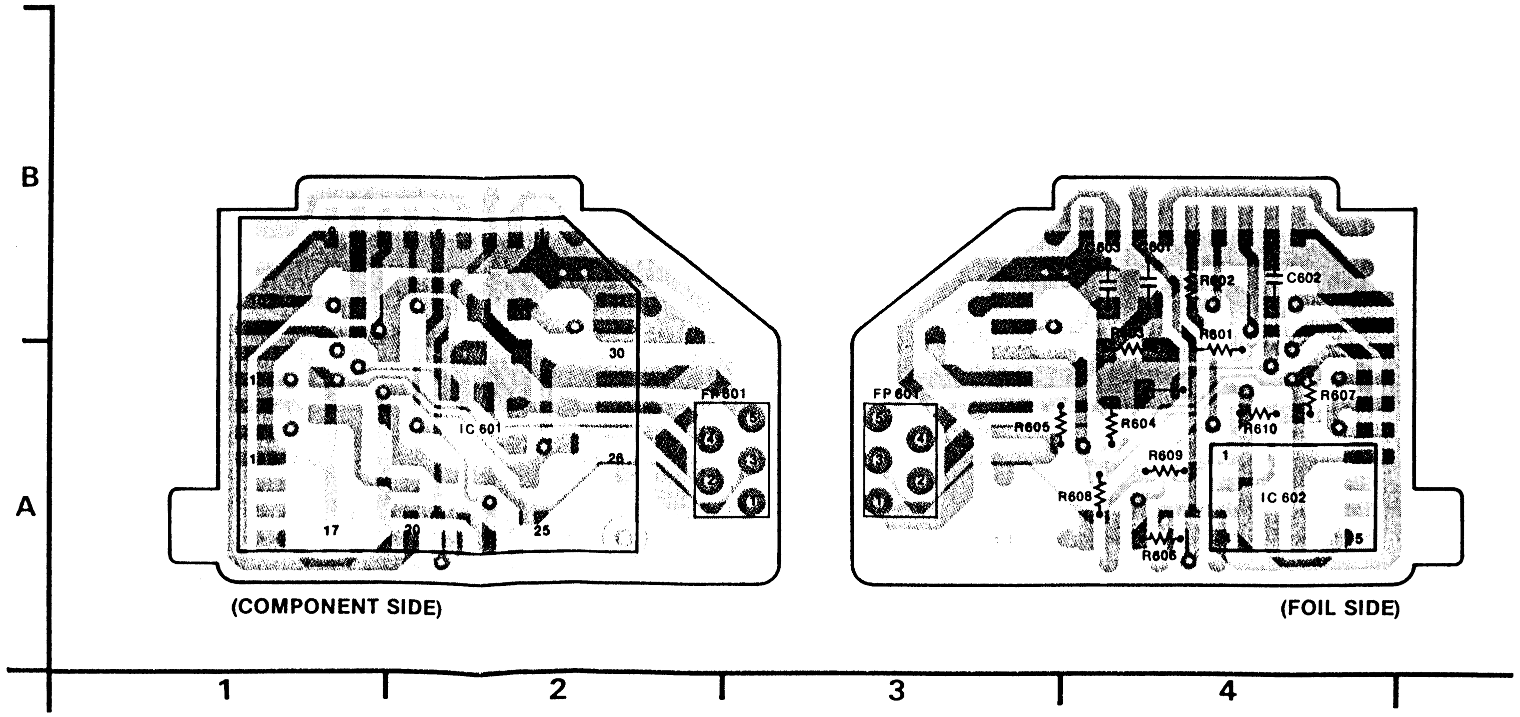
3-6. AWT (3) SCHEMATIC DIAGRAM


FP601 (TO PROCESS)
5V
B/G
R/G
LOW L Ⓗ
GND
FP302-1
FP302-2
FP302-3
FP302-4
FP302-5
(TO PAGE 3-29)
5V
R601 12K (1%)
R603 120K (1%)
R602 8200 (1%)
C601 0.1
C602 0.1
IC 601
M51096AU
SUBTRACTIVE TEMPERATURE COMPENSATOR
TEMPERATURE COMPENSATOR
SUBTRACTIVE TEMPERATURE COMPENSATOR
C603 0.1
R608 1K
R609 2200
R610 10K
R605 1K
R607 10K
R606 10K
R604 2200
IC 602
AN1358S
C
B
A
1
2
3
4
5
6

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-7. AWT (3) C.B.A.

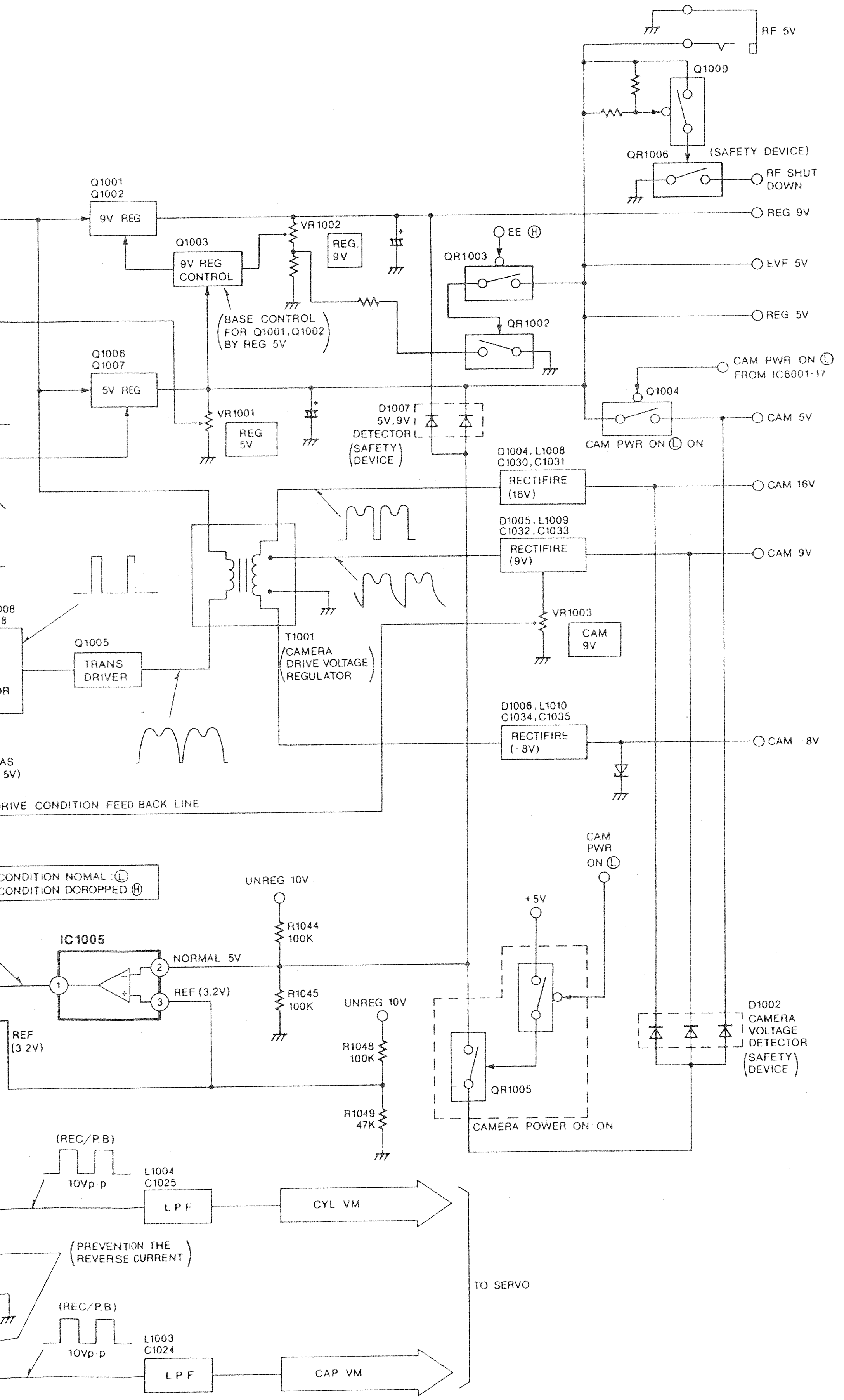

B
A
1
2
3
4
IC 601
FP601
30
28
17
20
25
FP601
C603
C601
R602
C602
R601
R605
R604
R607
R610
R609
R608
R606
IC 602
1
5

(COMPONENT SIDE)

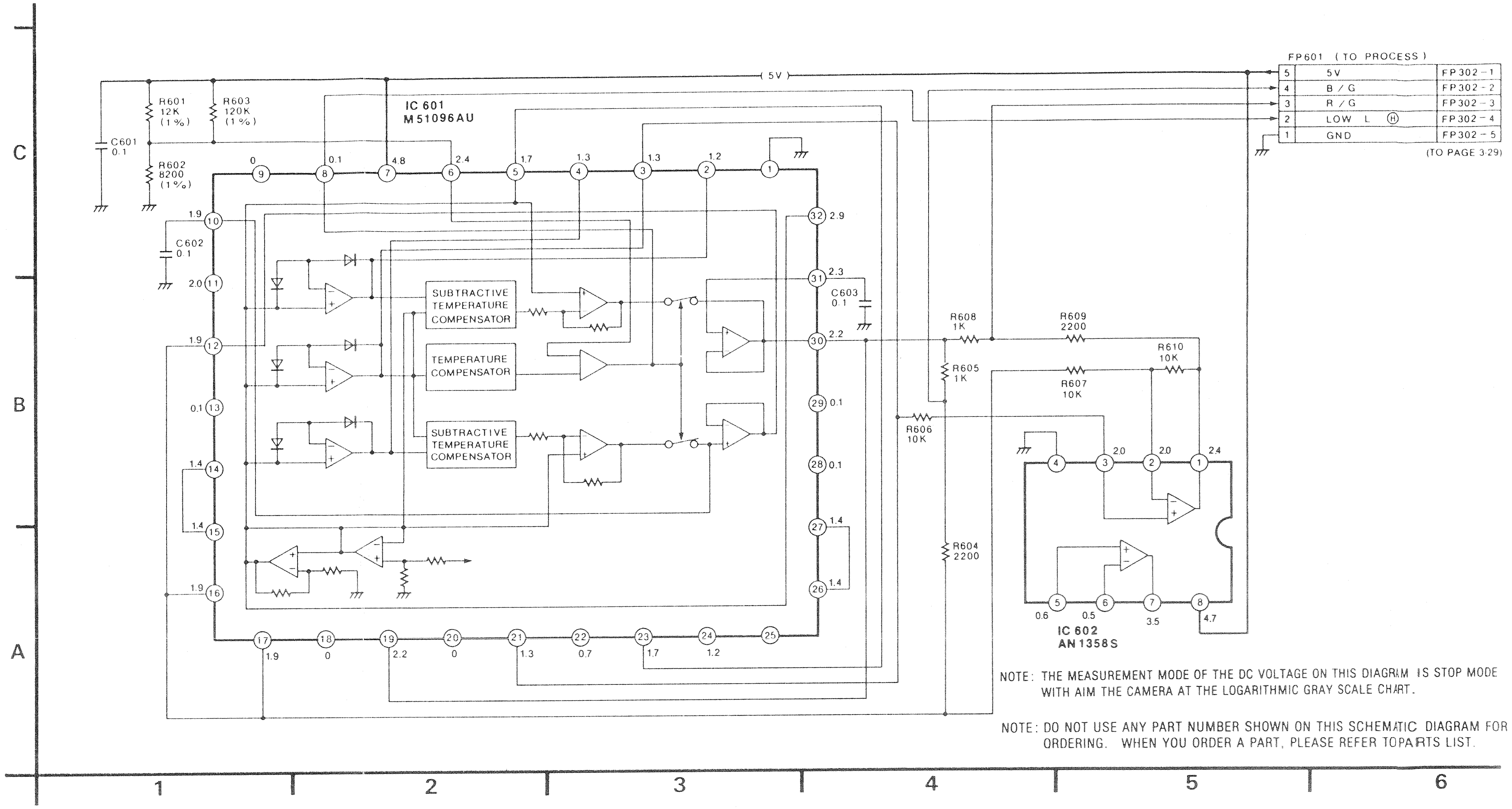
(FOIL SIDE)

AWT (3) C.B.A.	
Integrated Circuit	
IC601	A-2 ©
IC602	A-4 Ⓕ
Connector	
FP601	A-2 ©
FP601	A-3 Ⓕ

ADDRESS INFORMATION
©...COMPONENT SIDE
Ⓕ...FOIL SIDE


RF 5V
Q1009
QR1006
(SAFETY DEVICE)
RF SHUT DOWN
REG 9V
Q1001
Q1002
9V REG
VR1002
Q1003
9V REG CONTROL
REG. 9V
EE Ⓗ
QR1003
EVF 5V
REG 5V
QR1002
(BASE CONTROL FOR Q1001, Q1002 BY REG 5V)
Q1006
Q1007
5V REG
VR1001
REG 5V
D1007 5V,9V DETECTOR (SAFETY DEVICE)
CAM PWR ON Ⓛ FROM IC6001-17
Q1004
CAM 5V
CAM PWR ON Ⓛ ON
D1004, L1008 C1030, C1031
RECTIFIRE (16V)
CAM 16V
D1005, L1009 C1032, C1033
RECTIFIRE (9V)
CAM 9V
VR1003
CAM 9V
Q1005
TRANS DRIVER
T1001 (CAMERA DRIVE VOLTAGE REGULATOR)
D1006, L1010 C1034, C1035
RECTIFIRE (-8V)
CAM -8V
RIVE CONDITION FEED BACK LINE
CAM PWR ON Ⓛ
CONDITION NOMAL Ⓛ
CONDITION DOROPPED Ⓗ
UNREG 10V
R1044 100K
IC1005
NORMAL 5V
REF (3.2V)
R1045 100K
UNREG 10V
R1048 100K
R1049 47K
+5V
QR1005
CAMERA POWER ON ON
D1002 CAMERA VOLTAGE DETECTOR (SAFETY DEVICE)
REF (3.2V)
(REC/P.B)
10Vp-p
L1004 C1025
LPF
CYL VM
(PREVENTION THE REVERSE CURRENT)
TO SERVO
(REC/P.B)
10Vp-p
L1003 C1024
LPF
CAP VM

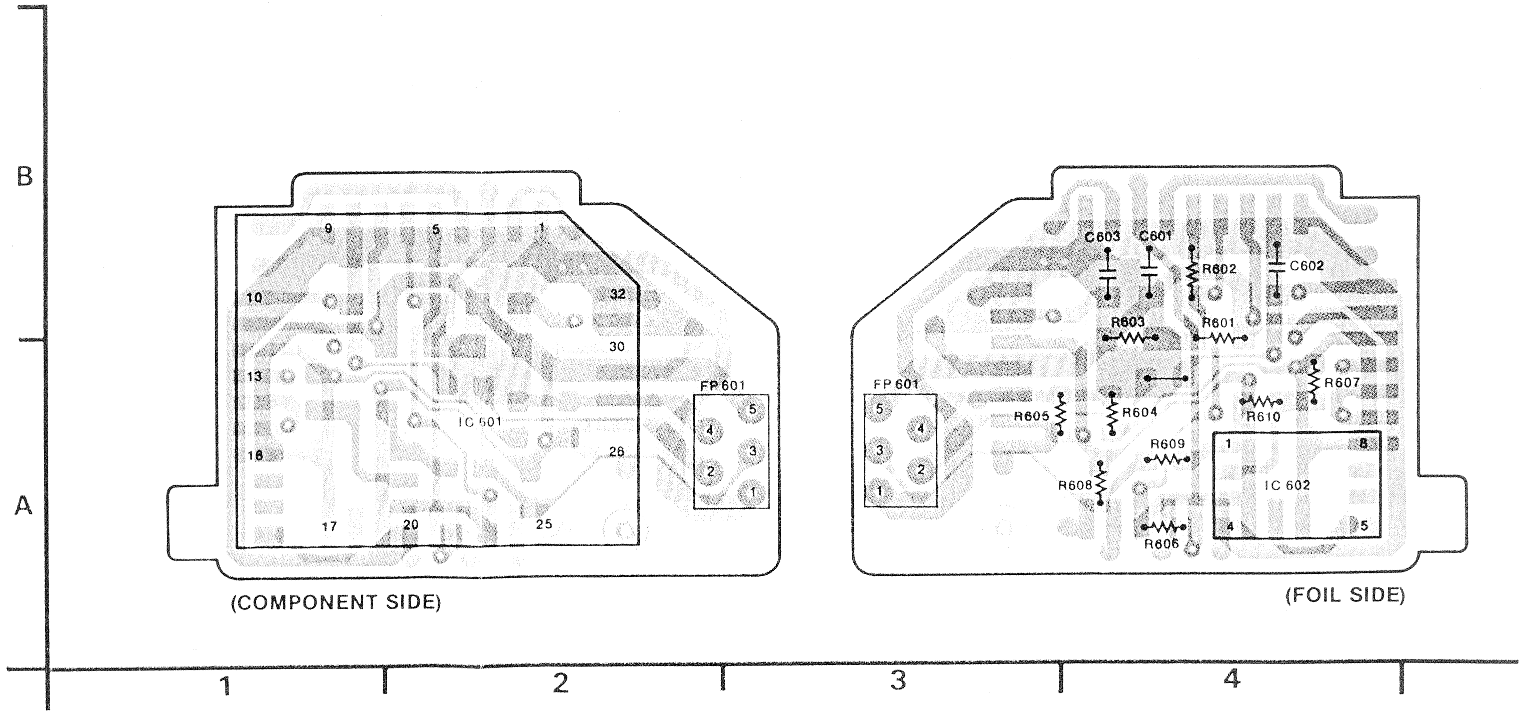
3-6. AWT (3) SCHEMATIC DIAGRAM


FP601 (TO PROCESS)
5 5V FP302-1
4 B/G FP302-2
3 R/G FP302-3
2 LOW L Ⓗ FP302-4
1 GND FP302-5
(TO PAGE 3-29)
5V
C601 0.1
R601 12K (1%)
R603 120K (1%)
R602 8200 (1%)
IC 601 M51096AU
C602 0.1
SUBTRACTIVE TEMPERATURE COMPENSATOR
TEMPERATURE COMPENSATOR
SUBTRACTIVE TEMPERATURE COMPENSATOR
C603 0.1
R608 1K
R609 2200
R610 10K
R605 1K
R607 10K
R606 10K
R604 2200
IC 602 AN1358S
C
B
A
1
2
3
4
5
6

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

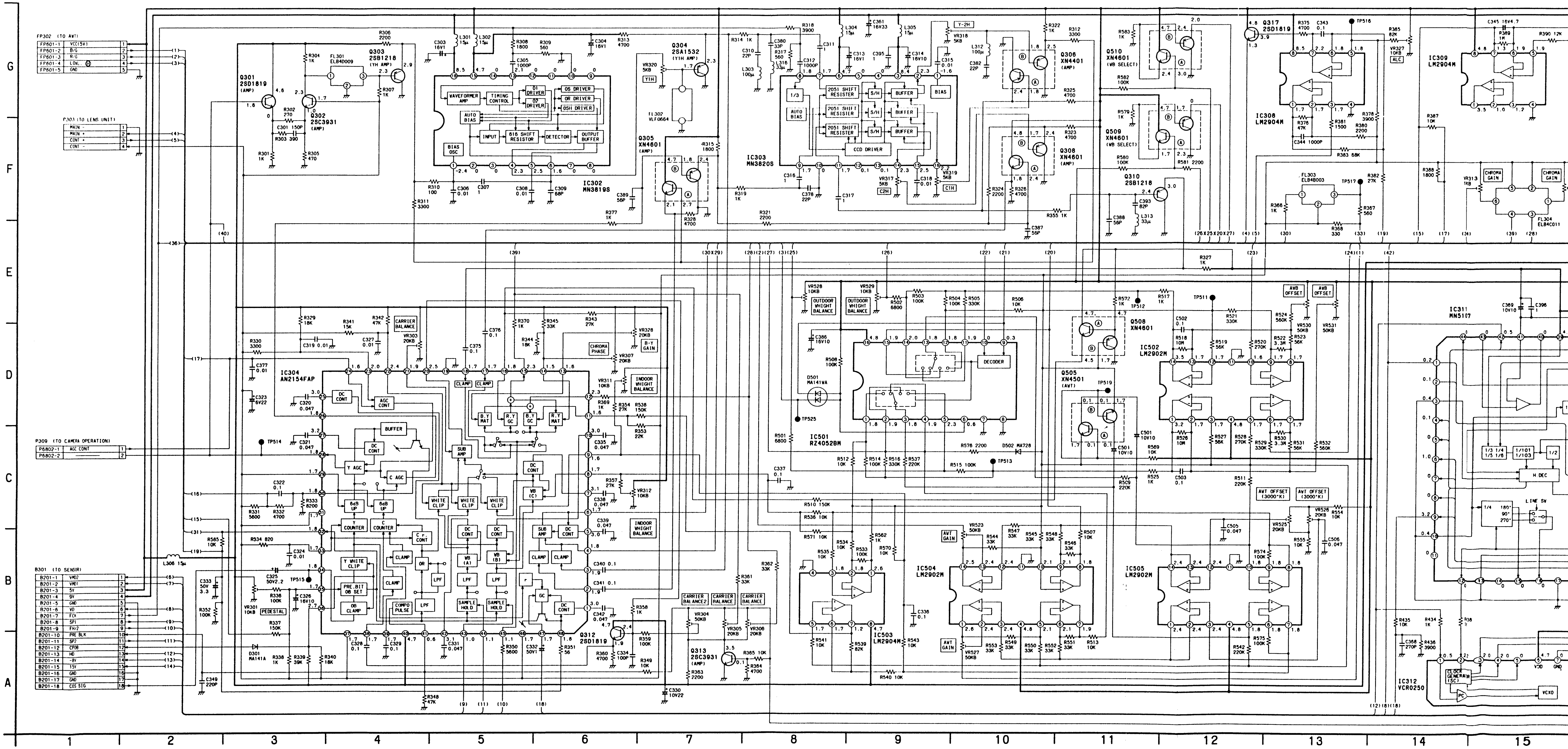
3-7. AWT (3) C.B.A.


IC 601
FP601
C603
C601
R602
C602
R603
R601
R607
R605
R604
R610
R609
R608
IC 602
R606
(COMPONENT SIDE)
(FOIL SIDE)
B
A
1
2
3
4

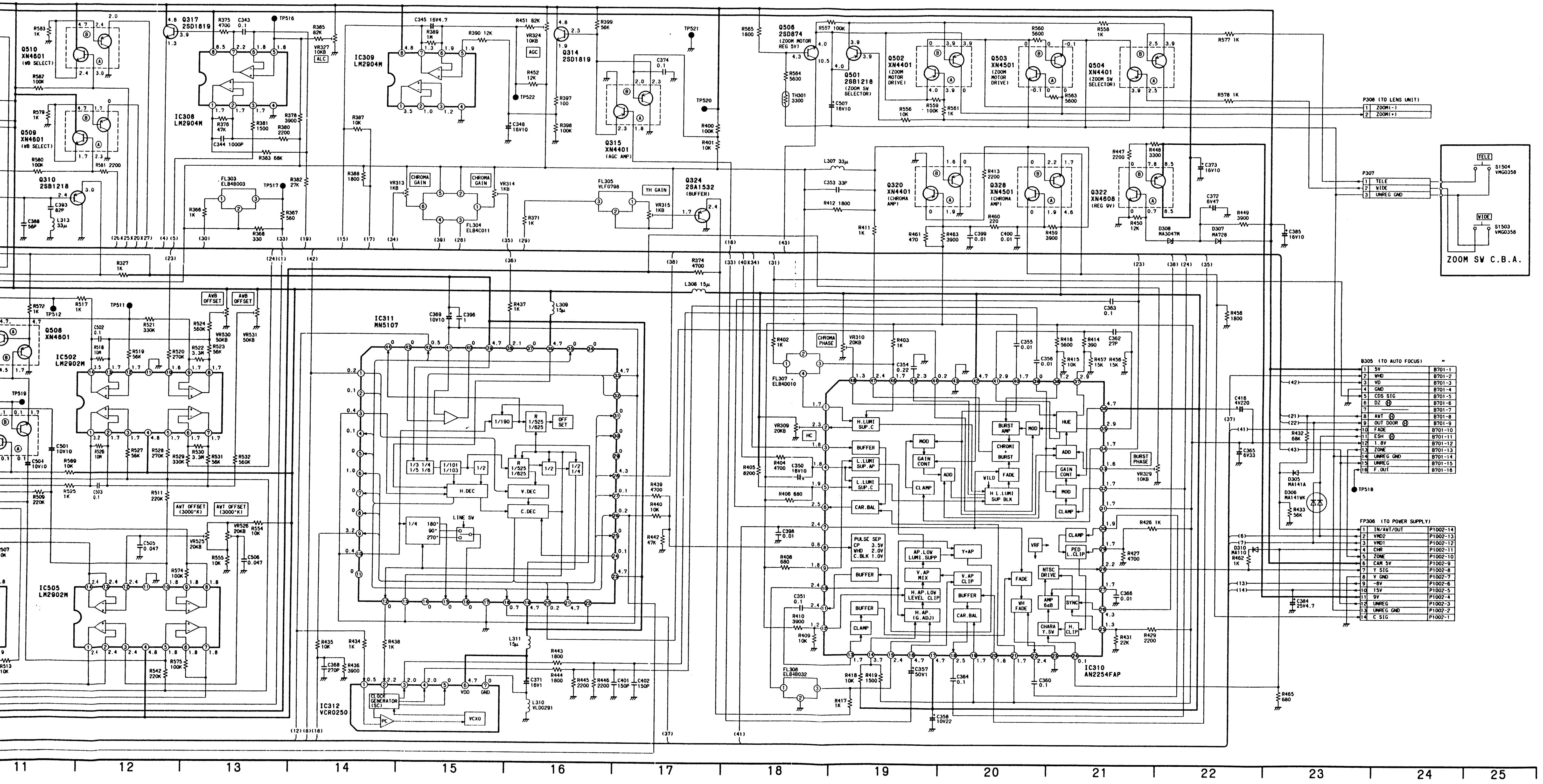
AWT (3) C.B.A.	
Integrated Circuit	
IC601	A-2 Ⓒ
IC602	A-4 Ⓕ
Connector	
FP601	A-2 Ⓒ
FP601	A-3 Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

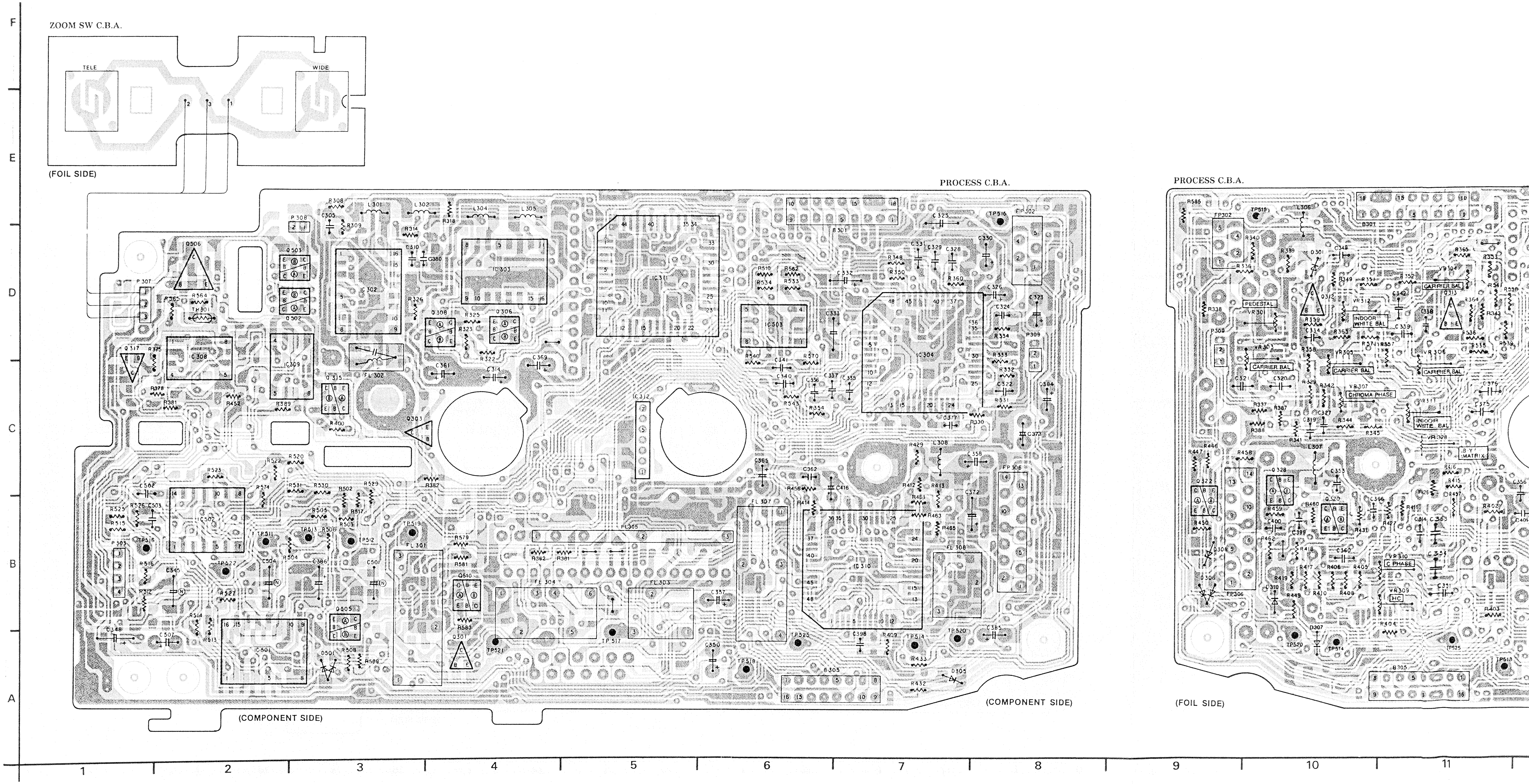
3-8. PROCESS SCHEMATIC DIAGRAM


FP302 (TO AVI)
P303 (TO LENS UNIT)
P309 (TO CAMERA OPERATION)
B301 (TO SENSOR)
Q301 2SD1819 (AMP)
Q302 2SC3931 (AMP)
Q303 2SB1218 (YH AMP)
FL301 ELB40009
IC302 MN3819S
Q304 2SA1532 (Y1H AMP)
Q305 XN4601 (AMP)
FL302 VLF0664
IC303 MN3820S
Q306 XN4401 (AMP)
Q308 XN4601 (AMP)
Q510 XN4601 (WB SELECT)
Q509 XN4601 (WB SELECT)
Q310 2SB1218
Q317 2SD1819
IC308 LM2904M
FL303 ELB4B003
IC309 LM2904M
FL304 ELB4C011
IC304 AN2154FAP
Q312 2SD1819
Q313 2SC3931 (AMP)
IC501 RZ4052BM
D501 MA141WA
D502 MA728
Q508 XN4601
Q505 XN4501 (AWT)
IC502 LM2902M
IC503 LM2904M
IC504 LM2902M
IC505 LM2902M
IC311 MN5107
IC312 VCR0250
D301 MA141A
L306 15μ
WAVEFORMER AMP
TIMING CONTROL
AUTO BIAS
BIAS OSC
INPUT
616 SHIFT RESISTOR
DETECTOR
OUTPUT BUFFER
OS DRIVER
OR DRIVER
OSH DRIVER
2051 SHIFT RESISTER
S/H
BUFFER
BIAS
CCD DRIVER
CARRIER BALANCE
CHROMA PHASE
B-Y GAIN
INDOOR WHIGHT BALANCE
DC CONT
AGC CONT
BUFFER
Y AGC
C AGC
6dB UP
Y COUNTER
C COUNTER
Y WHITE CLIP
PRE.BIT OB SET
OB CLAMP
COMPO PULSE
SAMPLE HOLD
WHITE CLIP
SUB AMP
CLAMP
B.Y MAT
R.Y GC
B.Y GC
R.Y MAT
WB (C)
WB (A)
WB (B)
LPF
OR
PEDESTAL
CARRIER BALANCE2
OUTDOOR WHIGHT BALANCE
DECODER
AWB OFFSET
AWT OFFSET (3000°K)
AWT GAIN
CHROMA GAIN
ALC
Y-2H
C2H
C1H
Y1H
H DEC
LINE SW
CLOCK GENERATOR (SC)
PC
VCXO
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
G F E D C B A

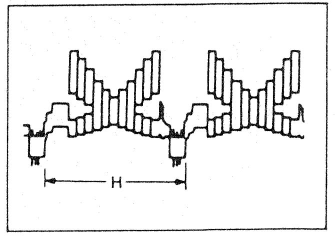
Back Page:
POWER SUPPLY & AWT (3) Section


Q510
XN4601
(WB SELECT)
Q509
XN4601
(WB SELECT)
Q310
2SB1218
Q317
2SD1819
IC308
LM2904M
IC309
LM2904M
AGC
ALC
Q314
2SD1819
Q315
XN4401
(AGC AMP)
TP516
TP517
TP520
TP521
TP522
FL303
ELB4B003
CHROMA GAIN
FL304
ELB4C011
FL305
VLF0798
YH GAIN
Q324
2SA1532
(BUFFER)
Q506
2SD874
(ZOOM MOTOR REG 5V)
Q501
2SB1218
(ZOOM SW SELECTOR)
Q502
XN4401
(ZOOM MOTOR DRIVE)
Q503
XN4501
(ZOOM MOTOR DRIVE)
Q504
XN4401
(ZOOM SW SELECTOR)
Q320
XN4401
(CHROMA AMP)
Q328
XN4501
(CHROMA AMP)
Q322
XN4608
(REG 9V)
D306
MA3047M
D307
MA728
P308 (TO LENS UNIT)
1 ZOOM(-)
2 ZOOM(+)
P307
1 TELE
2 WIDE
3 UNREG GND
TELE
S1504
VMG0358
WIDE
S1503
VMG0358
ZOOM SW C.B.A.
Q508
XN4601
IC502
LM2902M
TP511
TP512
TP519
AWB OFFSET
AWB OFFSET
AWT OFFSET (3000°K)
AWT OFFSET (3000°K)
IC505
LM2902M
IC311
MN5107
1/190
R 1/525 1/625
OFF SET
1/3 1/4 1/5 1/6
1/101 1/103
1/2
R 1/525 1/625
1/2
1/2 1/4
H.DEC
V.DEC
C.DEC
1/4
180° 90° 270°
LINE SW
IC312
VCR0250
CLOCK GENERATOR (SC)
PC
VCXO
VDD
GND
L310
VLD0291
FL307
ELB4D010
CHROMA PHASE
HC
H.LUMI SUP.C
BUFFER
L.LUMI SUP.AP
L.LUMI SUP.C
CAR.BAL
MOD
GAIN CONT
CLAMP
ADD
CHROMI + BURST
FADE
WILD
H L.LUMI SUP BLK
BURST AMP
MOD
HUE
ADD
GAIN CONT
MOD
CLAMP
BURST PHASE
PULSE SEP
CP 3.5V
WHD 2.0V
C.BLK 1.0V
BUFFER
BUFFER
CLAMP
AP.LOW LUMI.SUPP
V.AP MIX
H.AP.LOW LEVEL CLIP
H.AP. (G.ADJ)
Y+AP
V.AP CLIP
BUFFER
CAR.BAL
VRF
FADE
WH FADE
NTSC DRIVE
AMP 6dB
SYNC
CHARA Y.SW
H. CLIP
CLAMP
PED L.CLIP
IC310
AN2254FAP
FL308
ELB4B032
D305
MA141A
D306
MA141WK
D310
MA110
TP518
B305 (TO AUTO FOCUS)
1 5V B701-1
2 WHD B701-2
3 VD B701-3
4 GND B701-4
5 CDS SIG B701-5
6 DZ Ⓗ B701-6
7 B701-7
8 AWT Ⓗ B701-8
9 OUT DOOR Ⓗ B701-9
10 FADE B701-10
11 ESH Ⓗ B701-11
12 1.8V B701-12
13 ZONE B701-13
14 UNREG GND B701-14
15 UNREG B701-15
16 F.OUT B701-16
FP306 (TO POWER SUPPLY)
1 IN/AWT/OUT P1002-14
2 VMD2 P1002-13
3 VMD1 P1002-12
4 CHR P1002-11
5 ZONE P1002-10
6 CAM 5V P1002-9
7 Y SIG P1002-8
8 V GND P1002-7
9 -8V P1002-6
10 15V P1002-5
11 9V P1002-4
12 UNREG P1002-3
13 UNREG GND P1002-2
14 C SIG P1002-1
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

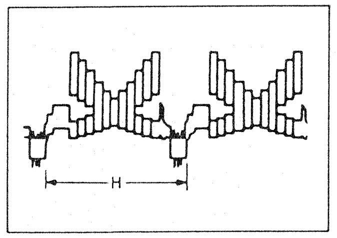
3-9. PROCESS C.B.A.


ZOOM SW C.B.A.
TELE
WIDE
(FOIL SIDE)
PROCESS C.B.A.
(COMPONENT SIDE)
PROCESS C.B.A.
(COMPONENT SIDE)
PROCESS C.B.A.
(FOIL SIDE)
PEDESTAL
CARRIER BAL
INDOOR WHITE BAL
CHROMA PHASE
C PHASE
HC
MATRIX
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

PROCESS CIRCUIT TP (Test Point)
WAVEFORM (REF. NO. 500 Series)

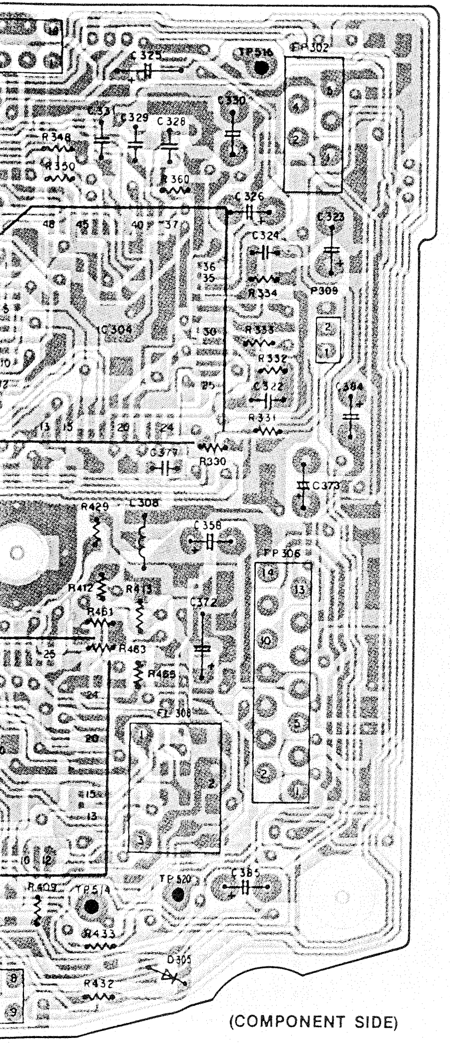


TP514 STOP
0.1V/20μsec. div. 0.32Vp-p



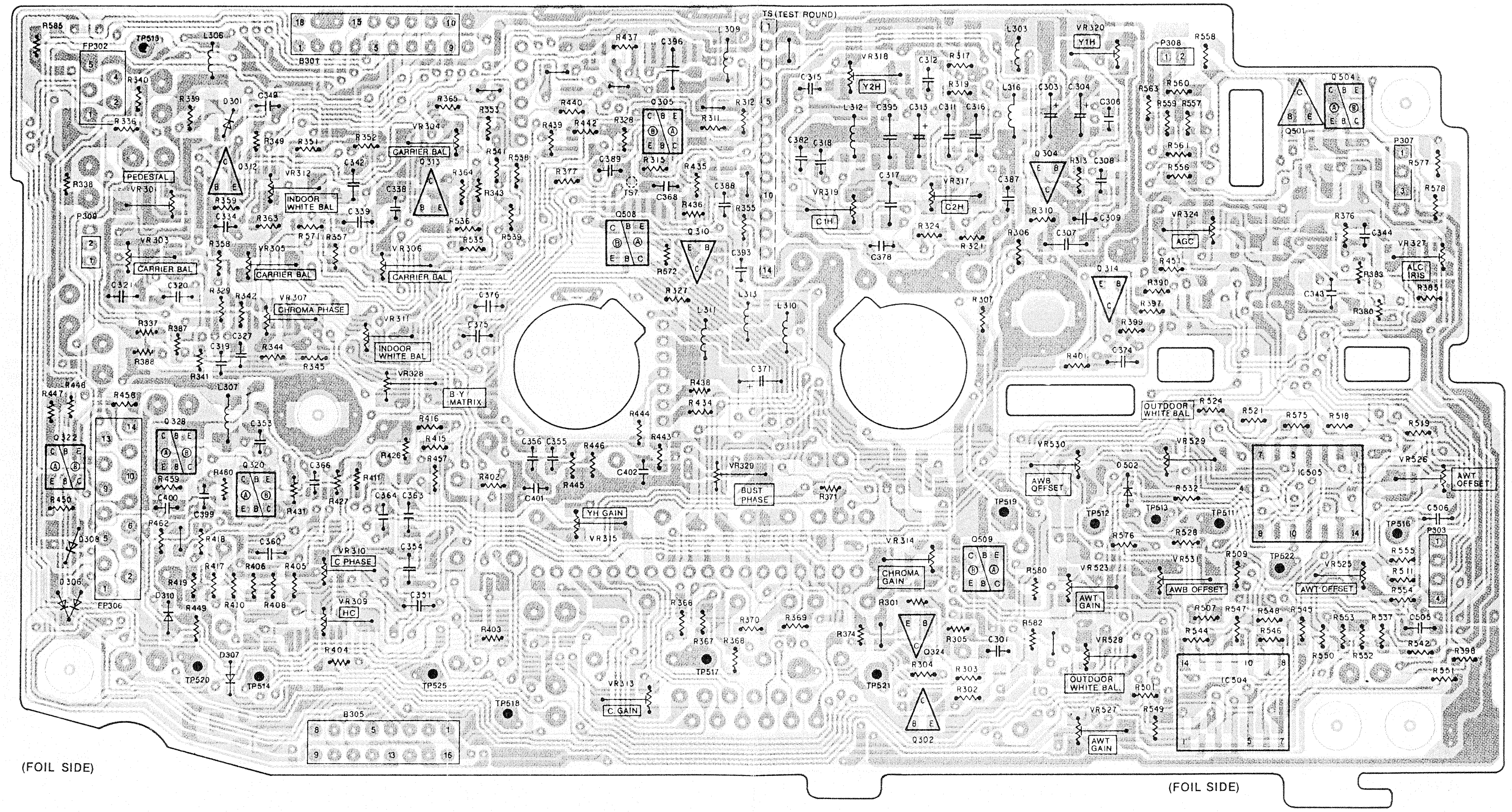
TP515 STOP
0.1V/20μsec. div. 0.45Vp-p

PROCESS C.B.A.



(COMPONENT SIDE)

PROCESS C.B.A.


TS (TEST ROUND)
PEDESTAL
INDOOR WHITE BAL
CARRIER BAL
CHROMA PHASE
B-Y MATRIX
C PHASE
HC
YH GAIN
BUST PHASE
C GAIN
CHROMA GAIN
Y2H
C1H
C2H
Y1H
AGC
ALC IRIS
OUTDOOR WHITE BAL
AWB OFFSET
AWT OFFSET
AWT GAIN

(FOIL SIDE)

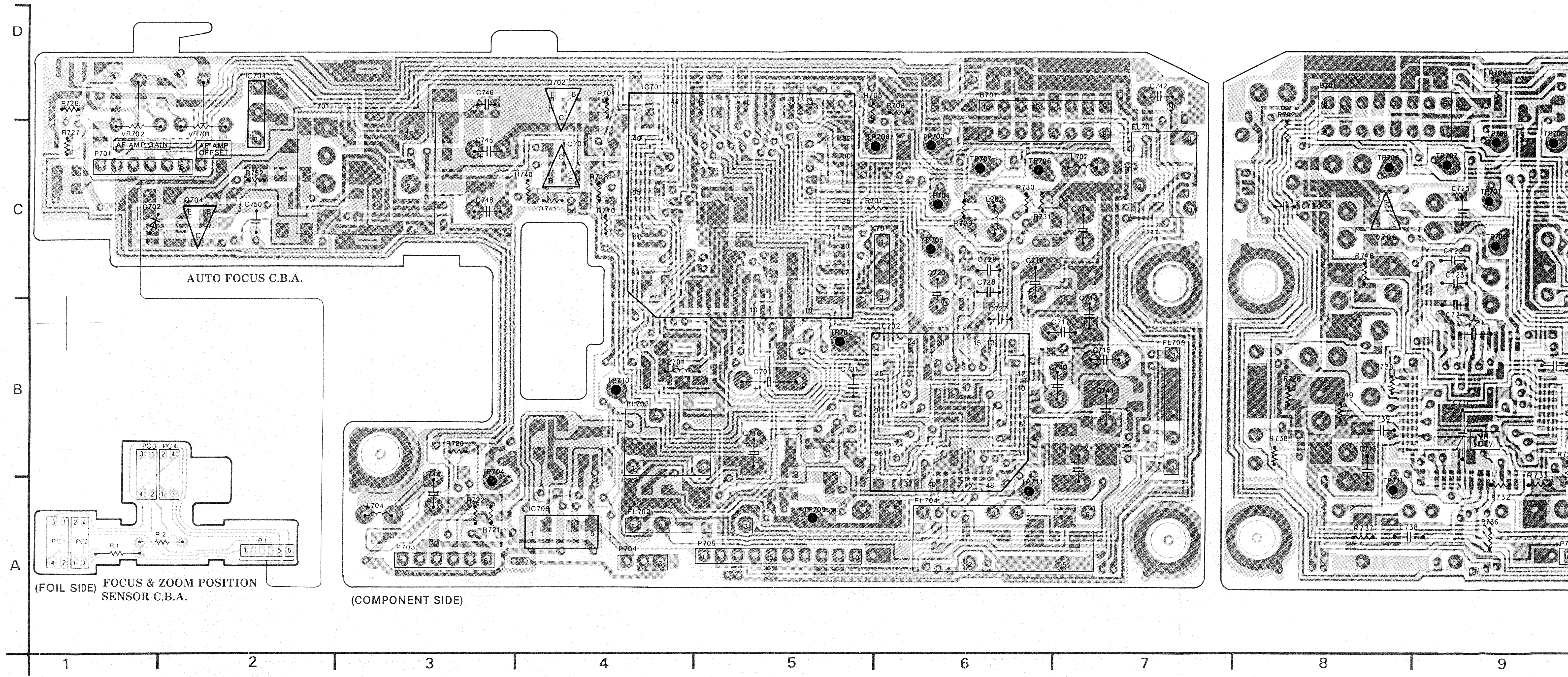
(FOIL SIDE)

7 8 9 10 11 12 13 14 15 16

PROCESS C.B.A.	
Transistor	
Q301	A-4 ©
Q302	A-14 Ⓕ
Q303	C-3 ©
Q304	D-14 Ⓕ
Q305	D-12 Ⓕ
Q306	D-4 ©
Q308	D-4 ©
Q310	D-12 Ⓕ
Q312	D-10 Ⓕ
Q313	D-11 Ⓕ
Q314	C-14 Ⓕ
Q315	C-3 ©
Q317	D-1 ©
Q320	B-10 Ⓕ
Q322	C-9 Ⓕ
Q324	A-14 Ⓕ
Q328	C-10 Ⓕ
Q501	D-15 Ⓕ
Q502	D-3 ©
Q503	D-3 ©
Q504	D-16 Ⓕ
Q505	B-3 ©
Q506	D-2 ©
Q508	D-12 Ⓕ
Q509	B-14 Ⓕ
Q510	B-4 ©
Integrated Circuit	
IC302	D-3 ©
IC303	D-4 ©
IC304	C-7 ©
IC308	D-2 ©
IC309	C-3 ©
IC310	B-7 ©
IC311	D-5 ©
IC312	C-5 ©
IC501	A-2 ©
IC502	B-2 ©
IC503	D-6 ©
IC504	A-15 Ⓕ
IC505	B-15 Ⓕ
Test Point	
TP511	B-2 ©
TP511	B-15 Ⓕ
TP512	B-3 ©
TP512	B-14 Ⓕ
TP513	B-3 ©
TP513	B-15 Ⓕ
TP514	A-7 ©
TP514	A-10 Ⓕ
TP515	E-8 ©
TP515	E-10 Ⓕ
TP516	B-1 ©
TP516	B-16 Ⓕ
TP517	A-5 ©
TP517	A-12 Ⓕ
TP518	A-6 ©
TP518	A-11 Ⓕ
TP519	B-3 ©
TP519	B-14 Ⓕ
TP520	A-7 ©
TP520	A-10 Ⓕ
TP521	A-4 ©
TP521	A-13 Ⓕ
TP522	B-2 ©
TP522	B-15 Ⓕ
TP525	A-6 ©
TP525	A-11 Ⓕ
Adjustment	
VR301	D-10 Ⓕ
VR303	D-10 Ⓕ
VR304	D-11 Ⓕ
VR305	C-10 Ⓕ
VR306	C-11 Ⓕ
VR307	C-10 Ⓕ
VR309	B-11 Ⓕ
VR310	B-11 Ⓕ
VR311	C-11 Ⓕ
VR312	D-10 Ⓕ
VR313	A-12 Ⓕ
VR314	B-13 Ⓕ
VR315	B-12 Ⓕ
VR317	D-14 Ⓕ
VR318	D-13 Ⓕ
VR319	D-13 Ⓕ
VR320	E-14 Ⓕ
VR324	D-15 Ⓕ
VR327	D-16 Ⓕ
VR328	C-11 Ⓕ
VR329	B-13 Ⓕ
VR523	B-14 Ⓕ
VR525	B-16 Ⓕ
VR526	B-16 Ⓕ
VR527	A-14 Ⓕ
VR528	B-14 Ⓕ
VR529	C-15 Ⓕ
VR530	C-14 Ⓕ
VR531	B-15 Ⓕ
Connector	
B301	D-7 ©
B301	D-10 Ⓕ
B305	A-6 ©
B305	A-11 Ⓕ
FP302	E-8 ©
FP302	D-9 Ⓕ
FP306	C-8 ©
FP306	B-9 Ⓕ
P307	D-1 ©
P307	D-16 Ⓕ
P308	E-3 ©
P308	E-15 Ⓕ
P309	D-8 ©
P309	D-9 Ⓕ
P303	B-1 ©
P303	B-16 Ⓕ

ADDRESS INFORMATION
©...COMPONENT SIDE
Ⓕ...FOIL SIDE

3-10. AUTO FOCUS C.B.A.

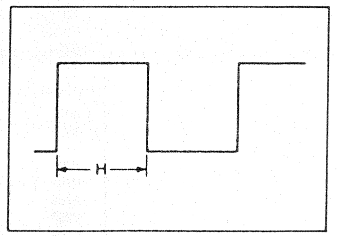

D
C
B
A
1
2
3
4
5
6
7
8
9
R726
R727
VR702
VR701
AF AMP GAIN
AF AMP OFFSET
P701
IC704
T701
R752
Q704
D702
C750
C746
C745
C748
Q702
Q703
R740
R741
R70
R718
R710
IC701
R705
R708
R707
X701
B701
C742
FL701
TP708
TP703
TP707
TP706
TP701
TP705
L702
L703
R730
R731
R729
C734
C729
C728
C719
C720
C727
Q718
C717
C715
C740
C741
C712
TP702
IC702
FL705
C701
C731
TP710
FL703
C716
R720
C744
TP704
L704
R722
R721
IC706
FL702
TP709
FL704
P703
P704
P705
TP711
R742
C730
D706
C725
R748
C722
C723
C724
R728
R749
R739
C739
C713
R738
R733
R732
R736
R737
C738
PC3
PC4
PC1
PC2
R1
R2
P1

AUTO FOCUS C.B.A.

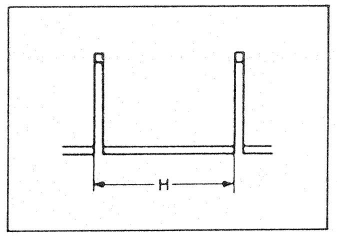
(FOIL SIDE) FOCUS & ZOOM POSITION SENSOR C.B.A.

(COMPONENT SIDE)

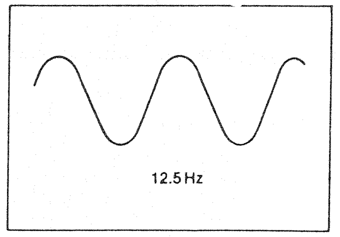
AUTO FOCUS CIRCUIT TP (Test Point)
WAVEFORM (REF. NO. 700 Series)



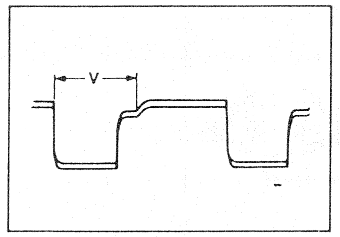
TP702 STOP
2.0V/20μsec. div. 4.5Vp-p



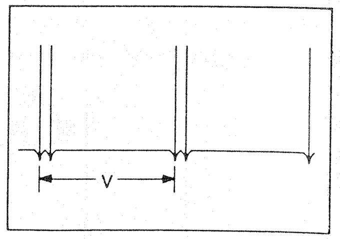
TP703 STOP
2.0V/20μsec. div. 5.0Vp-p



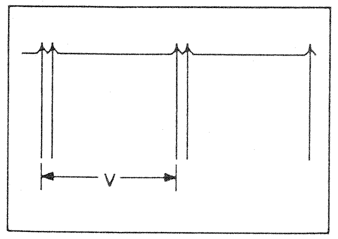
TP704 STOP
10.0V/20msec. div. 30Vp-p



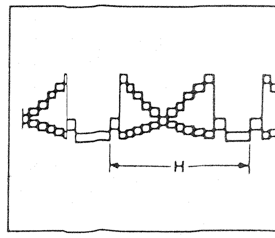
TP705 STOP
0.5V/5msec. div. 1.3Vp-p



TP707 STOP
2.0V/10msec. div. 5.0Vp-p



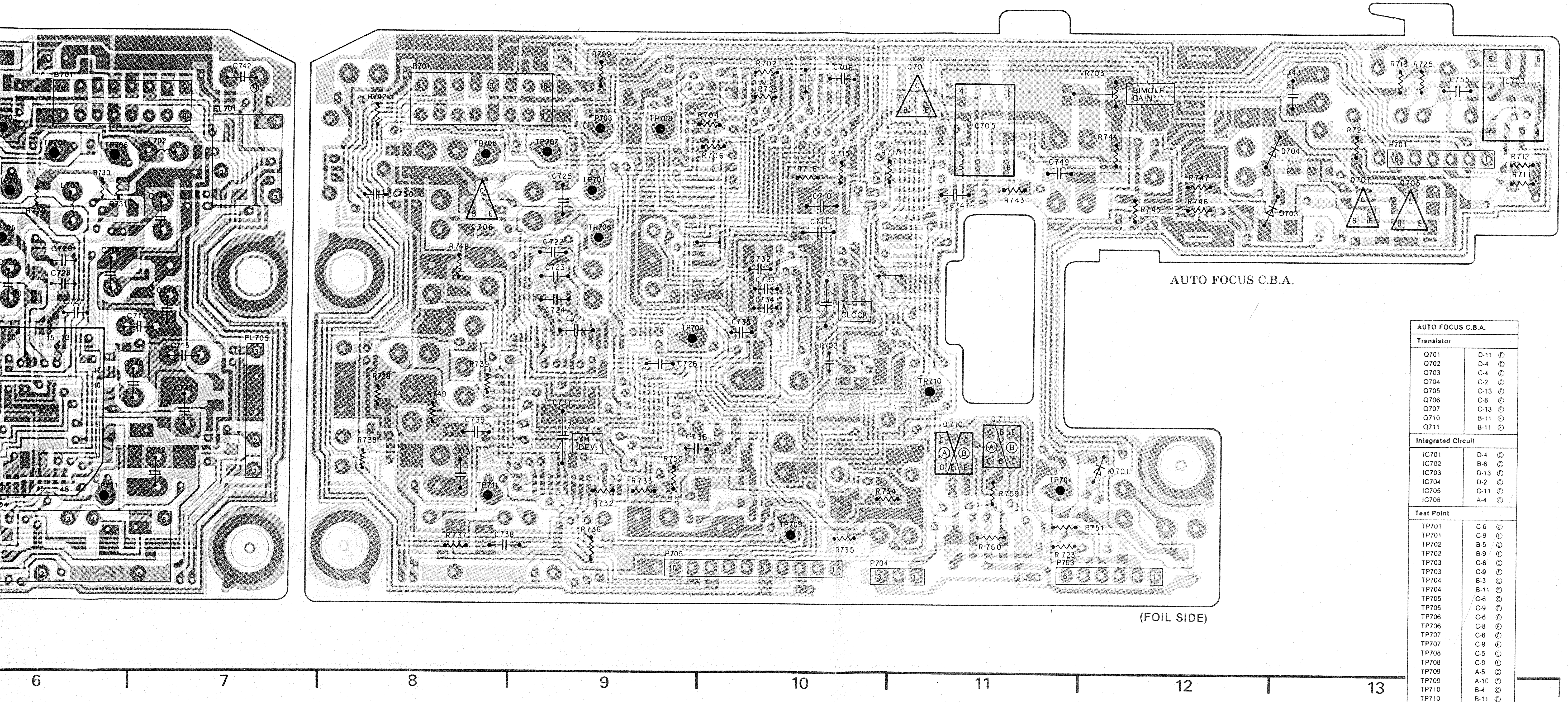
TP708 STOP
2.0V/10msec. div. 5.0Vp-p



TP710STOP
0.1V/2μsec. div. 0.3Vp-p

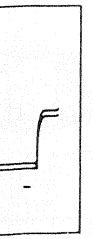
TP711STOP
0.2V/2μsec. div. 0.6Vp-p

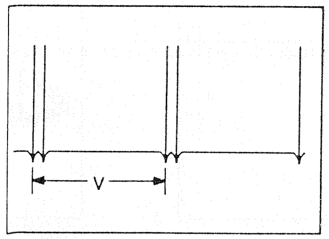
Back Page:
PROCESS Section


B701
C742
EL701
L702
FL705
R709
R702
R703
C706
Q701
VR703
BIMOLF GAIN
C743
R713
R725
C755
IC703
R742
TP703
TP708
R704
R706
TP706
TP707
C725
TP701
R716
R715
R717
IC705
R744
C749
R743
C747
R745
R747
R746
D704
D703
R724
P701
R712
R711
Q707
Q705
C730
Q706
TP705
C710
C711
R748
C722
C723
C724
C721
C732
C733
C734
C703
AF CLOCK
C735
TP702
Q702
C726
R739
R728
R749
C737
C739
C713
R738
YH DEV.
C736
R750
TP710
Q710
Q711
TP711
R733
R732
R734
R759
TP704
D701
R736
R737
C738
TP709
R735
R751
R760
R723
P705
P704
P703
6
7
8
9
10
11
12
13

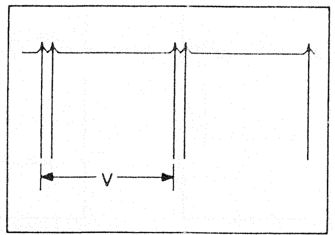
AUTO FOCUS C.B.A.

(FOIL SIDE)

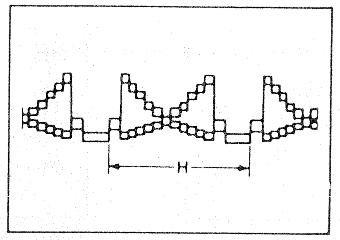




TP707 STOP
2.0V/10msec. div. 5.0Vp-p



TP708 STOP
2.0V/10msec. div. 5.0Vp-p



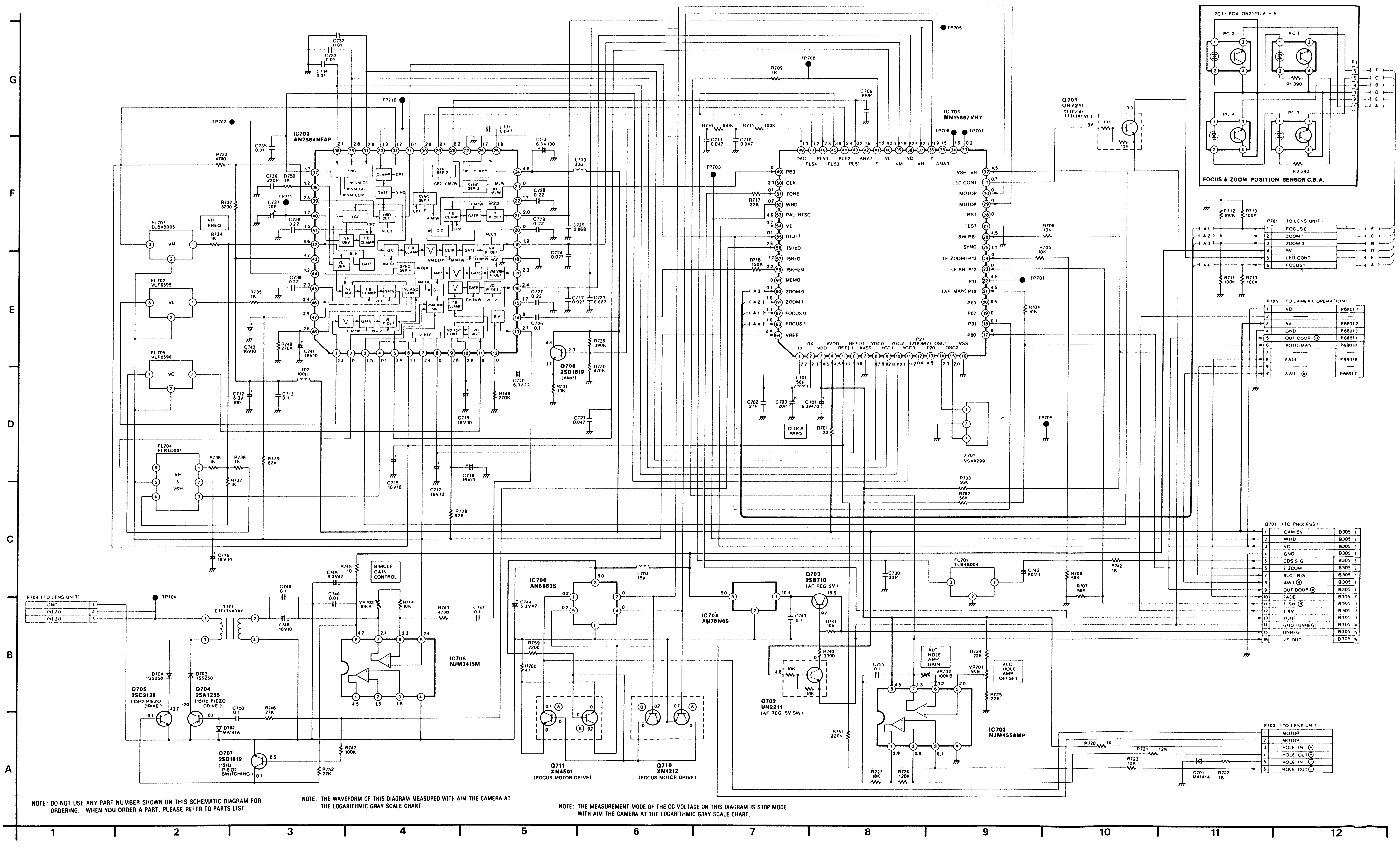
TP710 STOP
0.1V/20μsec. div. 0.3Vp-p

TP711 STOP
0.2V/20μsec. div. 0.6Vp-p

AUTO FOCUS C.B.A.	
Transistor	
Q701	D-11 Ⓕ
Q702	D-4 Ⓒ
Q703	C-4 Ⓒ
Q704	C-2 Ⓒ
Q705	C-13 Ⓕ
Q706	C-8 Ⓕ
Q707	C-13 Ⓕ
Q710	B-11 Ⓕ
Q711	B-11 Ⓕ
Integrated Circuit	
IC701	D-4 Ⓒ
IC702	B-6 Ⓒ
IC703	D-13 Ⓕ
IC704	D-2 Ⓒ
IC705	C-11 Ⓕ
IC706	A-4 Ⓒ
Test Point	
TP701	C-6 Ⓒ
TP701	C-9 Ⓕ
TP702	B-5 Ⓒ
TP702	B-9 Ⓕ
TP703	C-6 Ⓒ
TP703	C-9 Ⓕ
TP704	B-3 Ⓒ
TP704	B-11 Ⓕ
TP705	C-6 Ⓒ
TP705	C-9 Ⓕ
TP706	C-6 Ⓒ
TP706	C-8 Ⓕ
TP707	C-6 Ⓒ
TP707	C-9 Ⓕ
TP708	C-5 Ⓒ
TP708	C-9 Ⓕ
TP709	A-5 Ⓒ
TP709	A-10 Ⓕ
TP710	B-4 Ⓒ
TP710	B-11 Ⓕ
TP711	A-6 Ⓒ
TP711	A-8 Ⓕ
Adjustment	
VR701	C-2 Ⓒ
VR702	C-1 Ⓒ
VR703	D-11 Ⓕ
C703	C-10 Ⓕ
C737	B-9 Ⓕ
Connector	
B701	D-6 Ⓒ
B701	D-8 Ⓕ
P1	A-2 Ⓕ
P701	C-1 Ⓒ
P701	C-13 Ⓕ
P703	A-3 Ⓒ
P703	A-11 Ⓕ
P704	A-4 Ⓒ
P704	A-10 Ⓕ
P705	A-5 Ⓒ
P705	A-9 Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

3-11. AUTO FOCUS SCHEMATIC DIAGRAM

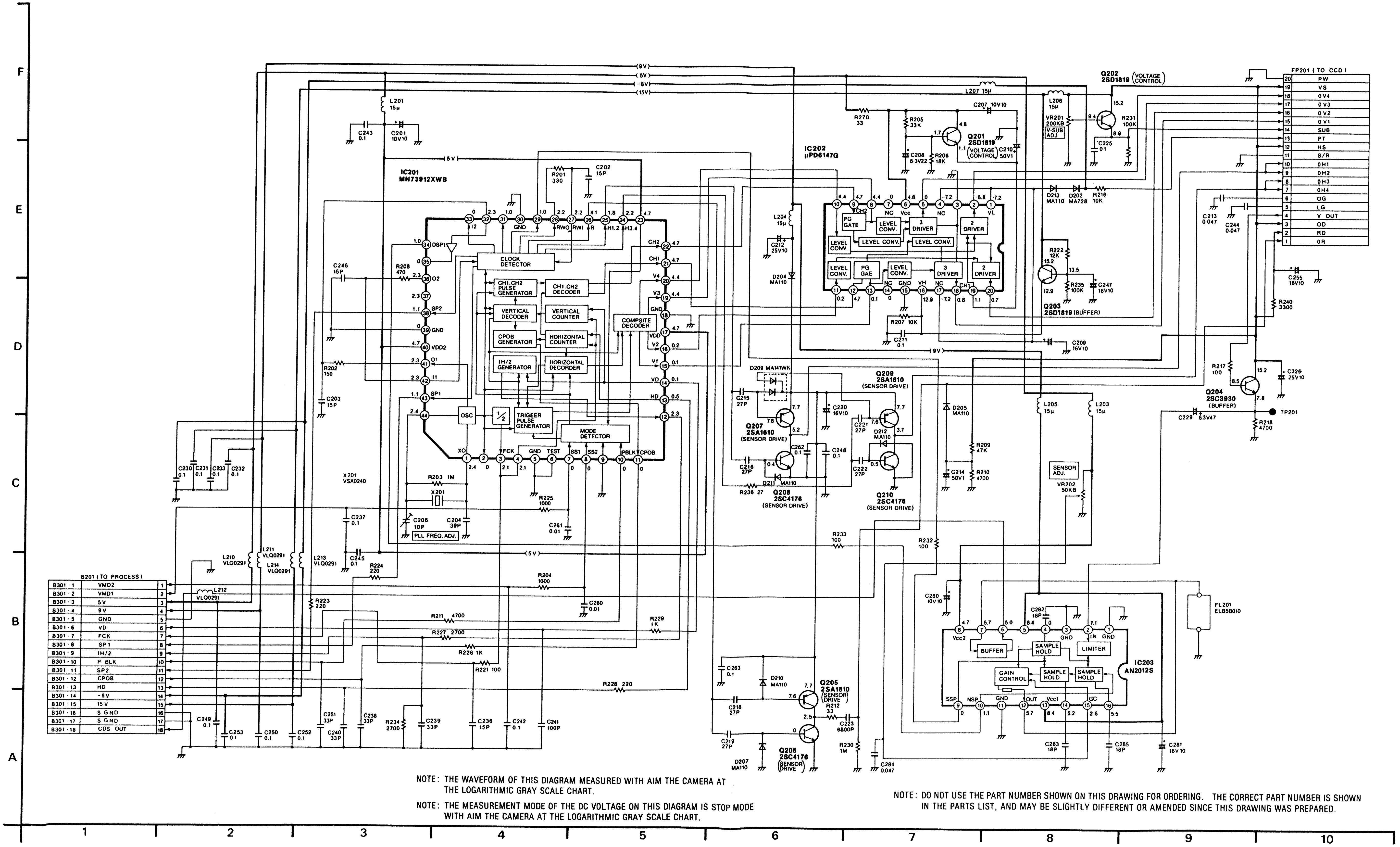

IC702
AN2584NFAP
IC701
MN15867VNY
IC705
NJM3415M
IC706
AN6663S
IC704
AN78N05
IC703
NJM4558MP
Q701
UN2211
Q702
UN2211
(AF REG 5V SW)
Q703
2SB710
(AF REG 5V)
Q704
2SA1255
(15Hz PIEZO DRIVE)
Q705
2SC3138
(15Hz PIEZO DRIVE)
Q706
2SD1819
(AMP)
Q707
2SD1819
(15Hz PIEZO SWITCHING)
Q710
XN1212
(FOCUS MOTOR DRIVE)
Q711
XN4501
(FOCUS MOTOR DRIVE)
FL702
VLF0595
FL703
ELB4B005
FL704
ELB4D001
FL705
VLF0596
FL701
ELB4B004
X701
VSX0299
T701
ETE13K43AY
VH FREQ
CLOCK FREQ
BIMOLF GAIN CONTROL
ALC HOLE AMP GAIN
ALC HOLE AMP OFFSET
TP701
TP702
TP703
TP704
TP705
TP706
TP707
TP708
TP709
TP710
TP711
PC1~PC4 ON2170LA × 4
PC 1
PC 2
PC 3
PC 4
R1 390
R2 390
FOCUS & ZOOM POSITION SENSOR C.B.A.
P701 (TO LENS UNIT)
1 FOCUS 0
2 ZOOM 1
3 ZOOM 0
4 5V
5 LED CONT
6 FOCUS 1
P705 (TO CAMERA OPERATION)
1 VD P6801 1
2
3 5V P6801 2
4 GND P6801 3
5 OUT DOOR Ⓗ P6801 4
6 AUTO/MAN P6801 5
7
8 FADE P6801 6
9
10 AWT Ⓗ P6801 7
B701 (TO PROCESS)
1 CAM 5V B305 1
2 WHD B305 2
3 VD B305 3
4 GND B305 4
5 CDS SIG B305 5
6 E ZOOM B305 6
7 BLC/IRIS B305 7
8 AWT Ⓗ B305 8
9 OUT DOOR Ⓗ B305 9
10 FADE B305 10
11 F SH Ⓗ B305 11
12 1 8V B305 12
13 ZONE B305 13
14 GND (UNREG) B305 14
15 UNREG B305 15
16 VF OUT B305 16
P703 (TO LENS UNIT)
1 MOTOR
2 MOTOR
3 HOLE IN ⊕
4 HOLE OUT ⊕
5 HOLE IN ⊖
6 HOLE OUT ⊖
P704 (TO LENS UNIT)
GND
PIEZO
PIEZO
A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

3-12. SENSOR SCHEMATIC DIAGRAM


F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
(9V)
(5V)
(-8V)
(15V)
(5V)
L201 15µ
C243 0.1
C201 10V10
IC201 MN73912XWB
R201 330
C202 15P
CLOCK DETECTOR
CH1,CH2 PULSE GENERATOR
CH1,CH2 DECODER
VERTICAL DECODER
VERTICAL COUNTER
CPOB GENERATOR
HORIZONTAL COUNTER
fH/2 GENERATOR
HORIZONTAL DECORDER
COMPSITE DECODER
OSC
1/2
TRIGEER PULSE GENERATOR
MODE DETECTOR
DSP1
O2
SP2
GND
VDD2
O1
I1
SP1
CH2
CH1
V4
V3
VDD
V2
V1
VD
HD
XO
FCK
TEST
SS1
SS2
PBLK
CPOB
RWO
RWI
R
H1.2
H3.4
C246 15P
R208 470
R202 150
C203 15P
X201 VSX0240
R203 1M
X201
C206 10P
C204 39P
PLL FREQ. ADJ.
R225 1000
C261 0.01
C237 0.1
C230 0.1
C231 0.1
C233 0.1
C232 0.1
L210 VLQ0291
L211 VLQ0291
L214 VLQ0291
L213 VLQ0291
L212 VLQ0291
C245 0.1
R224 220
R204 1000
C260 0.01
R223 220
R211 4700
R227 2700
R226 1K
R221 100
R229 1K
R228 220
C249 0.1
C253 0.1
C250 0.1
C252 0.1
C251 33P
C240 33P
C238 33P
R234 2700
C239 33P
C236 15P
C242 0.1
C241 100P
B201 (TO PROCESS)
B301 - 1 VMD2 1
B301 - 2 VMD1 2
B301 - 3 5V 3
B301 - 4 9V 4
B301 - 5 GND 5
B301 - 6 VD 6
B301 - 7 FCK 7
B301 - 8 SP1 8
B301 - 9 fH/2 9
B301 - 10 P BLK 10
B301 - 11 SP2 11
B301 - 12 CPOB 12
B301 - 13 HD 13
B301 - 14 -8V 14
B301 - 15 15V 15
B301 - 16 S GND 16
B301 - 17 S GND 17
B301 - 18 CDS OUT 18
IC202 µPD6147G
PG GATE
LEVEL CONV.
3 DRIVER
2 DRIVER
PG GAE
NC
Vcc
VL
VH
R270 33
R205 33K
C208 6.3V22
R206 18K
Q201 2SD1819 (VOLTAGE CONTROL)
C210 50V1
L207 15µ
C207 10V10
L204 15µ
C212 25V10
D204 MA110
R207 10K
C211 0.1
C209 16V10
Q202 2SD1819 (VOLTAGE CONTROL)
L206 15µ
VR201 200KB
V-SUB ADJ.
C225 0.1
R231 100K
D213 MA110
D202 MA728
R216 10K
R222 12K
Q203 2SD1819 (BUFFER)
R235 100K
C247 16V10
C213 0.047
C244 0.047
C255 16V10
R240 3300
FP201 (TO CCD)
20 PW
19 VS
18 0V4
17 0V3
16 0V2
15 0V1
14 SUB
13 PT
12 HS
11 S/R
10 0H1
9 0H2
8 0H3
7 0H4
6 OG
5 LG
4 V OUT
3 OD
2 RD
1 OR
D209 MA141WK
Q209 2SA1610 (SENSOR DRIVE)
C215 27P
C220 16V10
Q207 2SA1610 (SENSOR DRIVE)
C221 27P
D212 MA110
C262 0.1
C248 0.1
C216 27P
D211 MA110
R238 27
Q208 2SC4176 (SENSOR DRIVE)
C222 27P
Q210 2SC4176 (SENSOR DRIVE)
D205 MA110
R209 47K
C214 50V1
R210 4700
L205 15µ
L203 15µ
SENSOR ADJ.
VR202 50KB
R217 100
Q204 2SC3930 (BUFFER)
C226 25V10
C229 6.3V47
R218 4700
TP201
R233 100
R232 100
C280 10V10
C282 18P
FL201 ELB5B010
IC203 AN2012S
BUFFER
SAMPLE HOLD
LIMITER
GAIN CONTROL
Vcc2
SSP
NSP
GND
OUT
Vcc1
GC
IN
C283 18P
C285 18P
C281 16V10
C263 0.1
D210 MA110
Q205 2SA1610 (SENSOR DRIVE)
C218 27P
R212 33
C223 6800P
C219 27P
D207 MA110
Q206 2SC4176 (SENSOR DRIVE)
R230 1M
C284 0.047

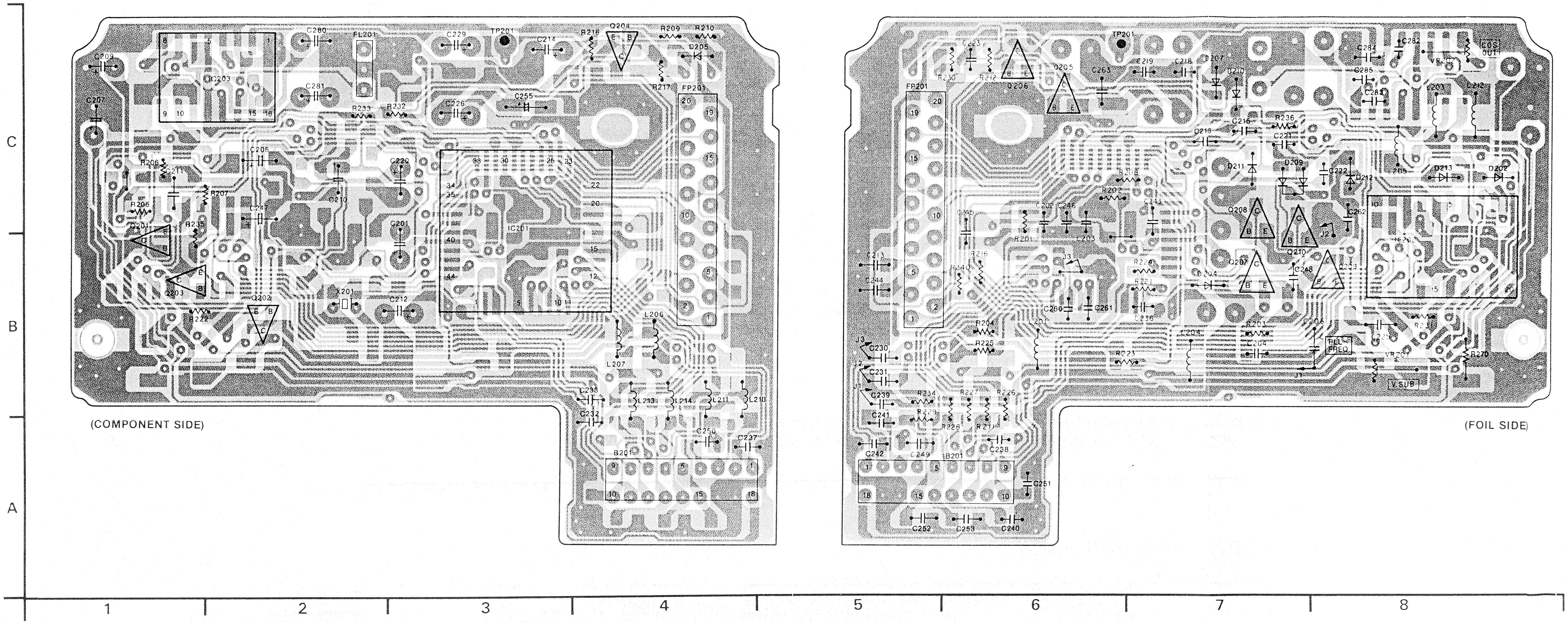
NOTE: THE WAVEFORM OF THIS DIAGRAM MEASURED WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Back Page:
AUTO FOCUS Section

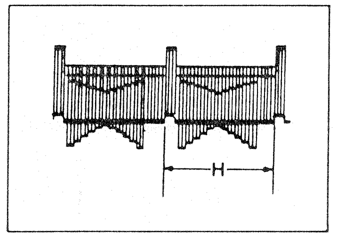
3-13. SENSOR C.B.A.


C
B
A
1
2
3
4
5
6
7
8
C209
C207
IC203
C280
FL201
C281
C229
TP201
C214
R218
Q204
R209
R210
D205
R217
FP201
C226
C255
R233
R232
C205
R208
R211
R207
R206
C247
R235
Q201
Q203
Q202
R222
C210
C220
C201
IC201
X201
C212
L206
L207
C238
C232
L213
L214
L211
L210
C250
C237
B201
C223
R230
R212
Q206
Q205
C263
C219
C218
D207
D210
C284
C282
COS OUT
VR202
C285
C283
L203
L212
C216
R236
C221
D211
D209
C222
D212
D213
D202
L205
R205
R202
C202
C246
R201
C203
C213
C244
R216
R240
C248
Q208
Q210
Q207
R229
R221
C260
C261
C236
R204
R225
R203
R223
C204
C206
REL FREQ
VR201
R270
V.SUB
C230
C231
C239
C241
C242
C249
R234
R227
R226
R228
R219
C238
C251
C252
C253
C240
J1
J2
J3

(COMPONENT SIDE)

(FOIL SIDE)

SENSOR CIRCUIT TP (Test Point)
WAVEFORM (REF. NO. 200 Series)



TP201 STOP
0.2V/20μsec. div. 0.8Vp-p

SENSOR C.B.A.

Transistor	
Q201	C-1 Ⓒ
Q202	B-2 Ⓒ
Q203	B-1 Ⓒ
Q204	C-4 Ⓒ
Q205	C-6 Ⓕ
Q206	C-6 Ⓕ
Q207	B-7 Ⓕ
Q208	C-7 Ⓕ
Q209	B-8 Ⓕ
Q210	B-7 Ⓕ

Integrated Circuit	
IC201	C-3 Ⓒ
IC202	B-8 Ⓕ
IC203	C-2 Ⓒ

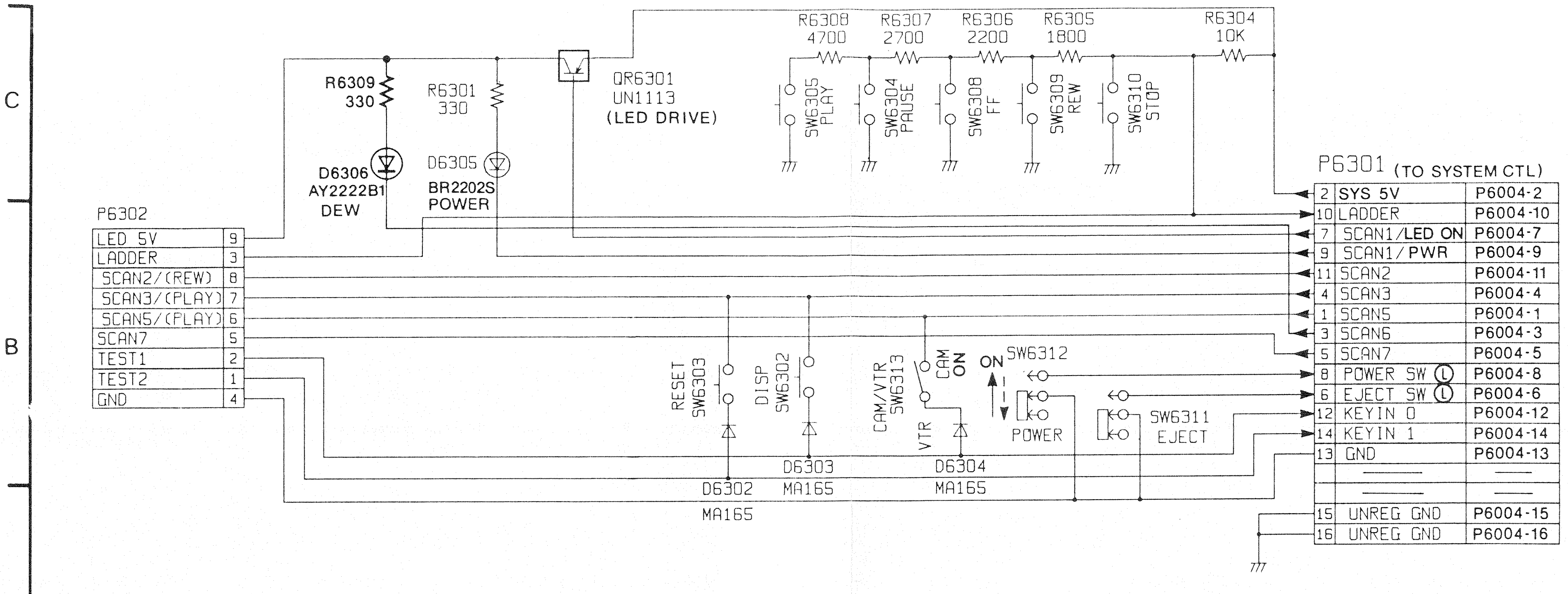
Test Point	
TP201	C-3 Ⓒ
TP201	C-6 Ⓕ

Adjustment	
C206	B-8 Ⓕ
VR201	B-8 Ⓕ
VR202	C-8 Ⓕ

Connector	
B201	A-4 Ⓒ
B201	A-6 Ⓕ
FP201	C-4 Ⓒ
FP201	C-5 Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

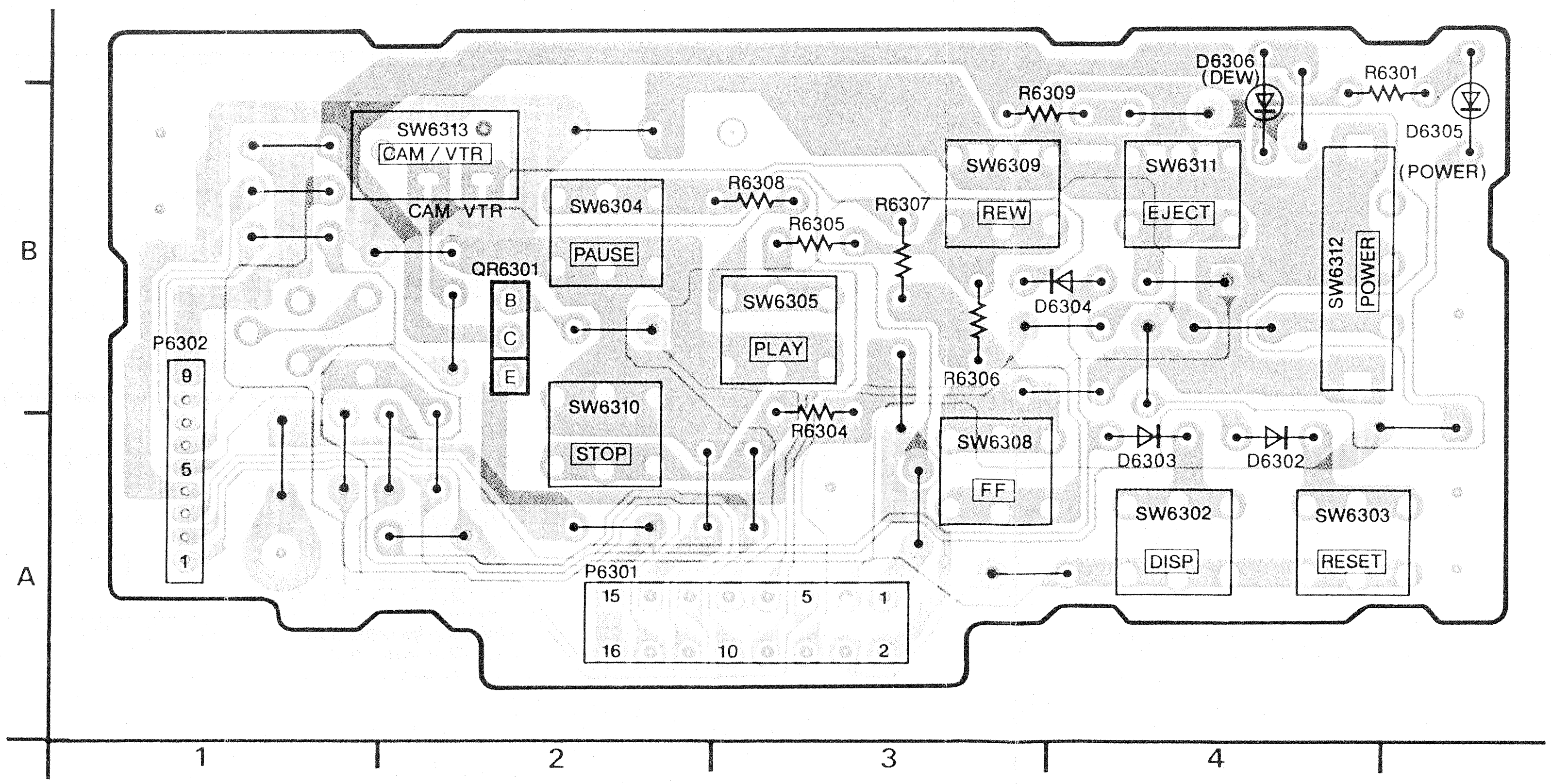
3-14. VTR OPERATION SCHEMATIC DIAGRAM


C
B
A
R6308 4700
R6307 2700
R6306 2200
R6305 1800
R6304 10K
R6309 330
R6301 330
QR6301 UN1113 (LED DRIVE)
SW6305 PLAY
SW6304 PAUSE
SW6308 FF
SW6309 REW
SW6310 STOP
D6306 AY2222B1 DEW
D6305 BR2202S POWER
P6302
LED 5V 9
LADDER 3
SCAN2/(REW) 8
SCAN3/(PLAY) 7
SCAN5/(PLAY) 6
SCAN7 5
TEST1 2
TEST2 1
GND 4
P6301 (TO SYSTEM CTL)
2 SYS 5V P6004-2
10 LADDER P6004-10
7 SCAN1/LED ON P6004-7
9 SCAN1/PWR P6004-9
11 SCAN2 P6004-11
4 SCAN3 P6004-4
1 SCAN5 P6004-1
3 SCAN6 P6004-3
5 SCAN7 P6004-5
8 POWER SW Ⓛ P6004-8
6 EJECT SW Ⓛ P6004-6
12 KEYIN 0 P6004-12
14 KEYIN 1 P6004-14
13 GND P6004-13
15 UNREG GND P6004-15
16 UNREG GND P6004-16
RESET SW6303
DISP SW6302
CAM/VTR SW6313
CAM ON
VTR
ON SW6312 POWER
SW6311 EJECT
D6302 MA165
D6303 MA165
D6304 MA165

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

1
2
3
4
5

3-15. VTR OPERATION C.B.A.

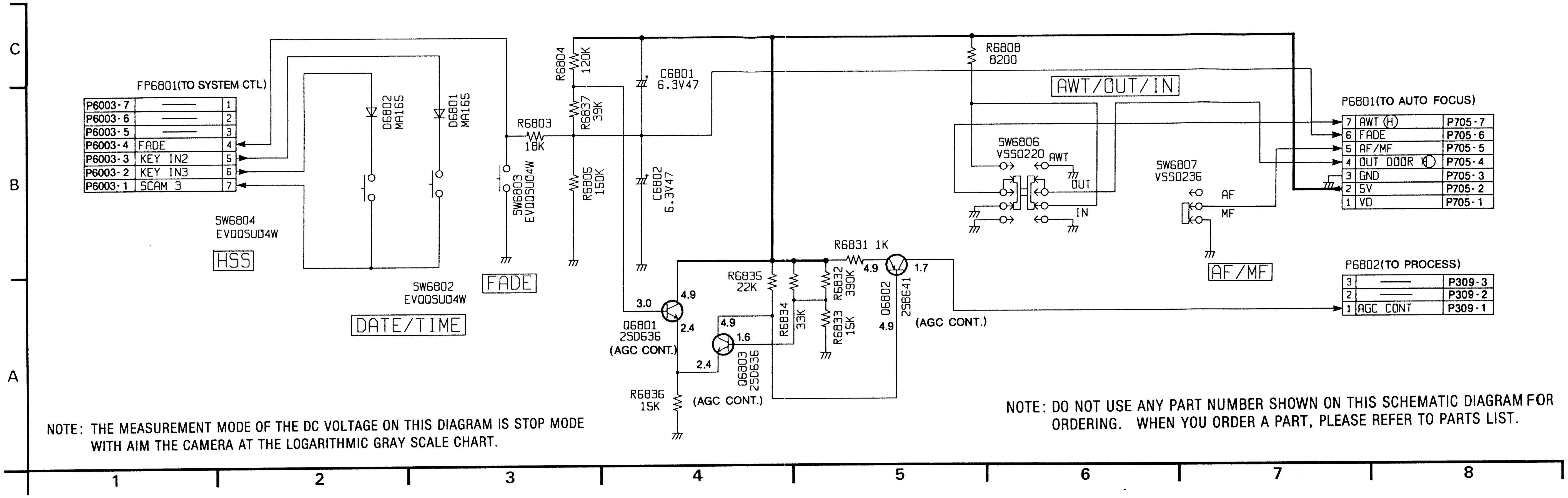

B
A
SW6313 CAM/VTR
CAM VTR
SW6304 PAUSE
QR6301 B C E
R6308
R6305
R6307
SW6305 PLAY
SW6310 STOP
R6304
R6309
R6306
SW6309 REW
SW6311 EJECT
D6304
SW6308 FF
D6303
D6302
D6306 (DEW)
R6301
D6305 (POWER)
SW6312 POWER
SW6302 DISP
SW6303 RESET
P6302 9 5 1
P6301 15 5 1 16 10 2
1
2
3
4

VTR OPERATION C.B.A.	
Transistor & Resistor	
QR6301	B-2
Connector	
P6301	A-2
P6302	B-1

ADDRESS INFORMATION

Back Page:
SENSOR Section

3-16. CAMERA OPERATION SCHEMATIC DIAGRAM

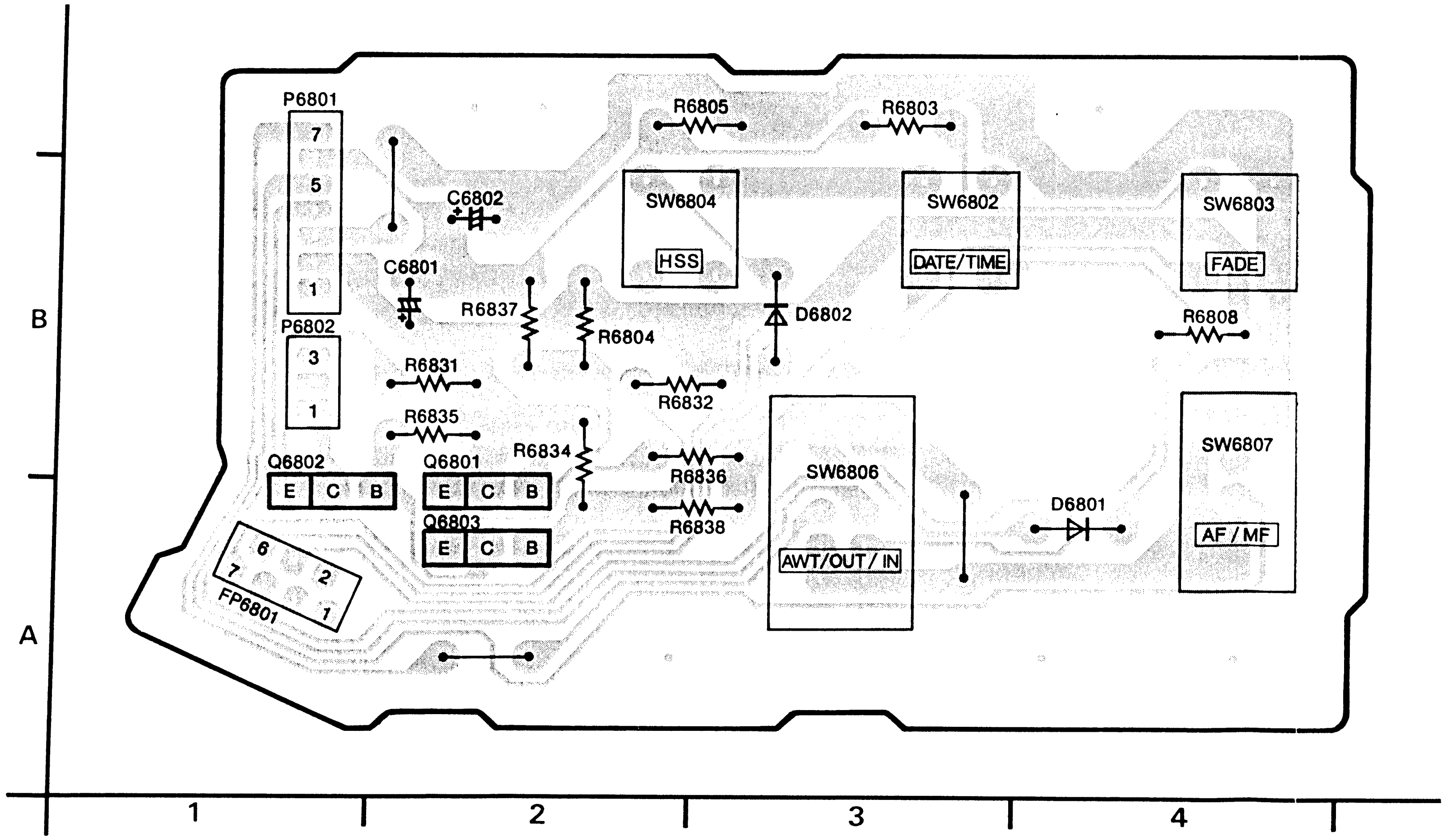


C
B
A
FP6801(TO SYSTEM CTL)
P6003-7 1
P6003-6 2
P6003-5 3
P6003-4 FADE 4
P6003-3 KEY IN2 5
P6003-2 KEY IN3 6
P6003-1 SCAM 3 7
SW6804
EVQQSUO4W
HSS
D6802
MA165
D6801
MA165
SW6802
EVQQSUO4W
DATE/TIME
R6803
18K
SW6803
EVQQSUO4W
FADE
R6804
120K
R6837
39K
R6805
150K
C6801
6.3V47
C6802
6.3V47
Q6801
2SD636
(AGC CONT.)
3.0
4.9
2.4
Q6803
2SD636
(AGC CONT.)
1.6
R6836
15K
R6835
22K
R6834
33K
R6832
390K
R6833
15K
R6831 1K
Q6802
2SB641
(AGC CONT.)
1.7
R6808
8200
AWT/OUT/IN
SW6806
VSS0220
AWT
OUT
IN
SW6807
VSS0236
AF
MF
AF/MF
P6801(TO AUTO FOCUS)
7 AWT (H) P705-7
6 FADE P705-6
5 AF/MF P705-5
4 OUT DOOR (L) P705-4
3 GND P705-3
2 5V P705-2
1 VD P705-1
P6802(TO PROCESS)
3 P309-3
2 P309-2
1 AGC CONT P309-1
1
2
3
4
5
6
7
8

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-17. CAMERA OPERATION C.B.A.

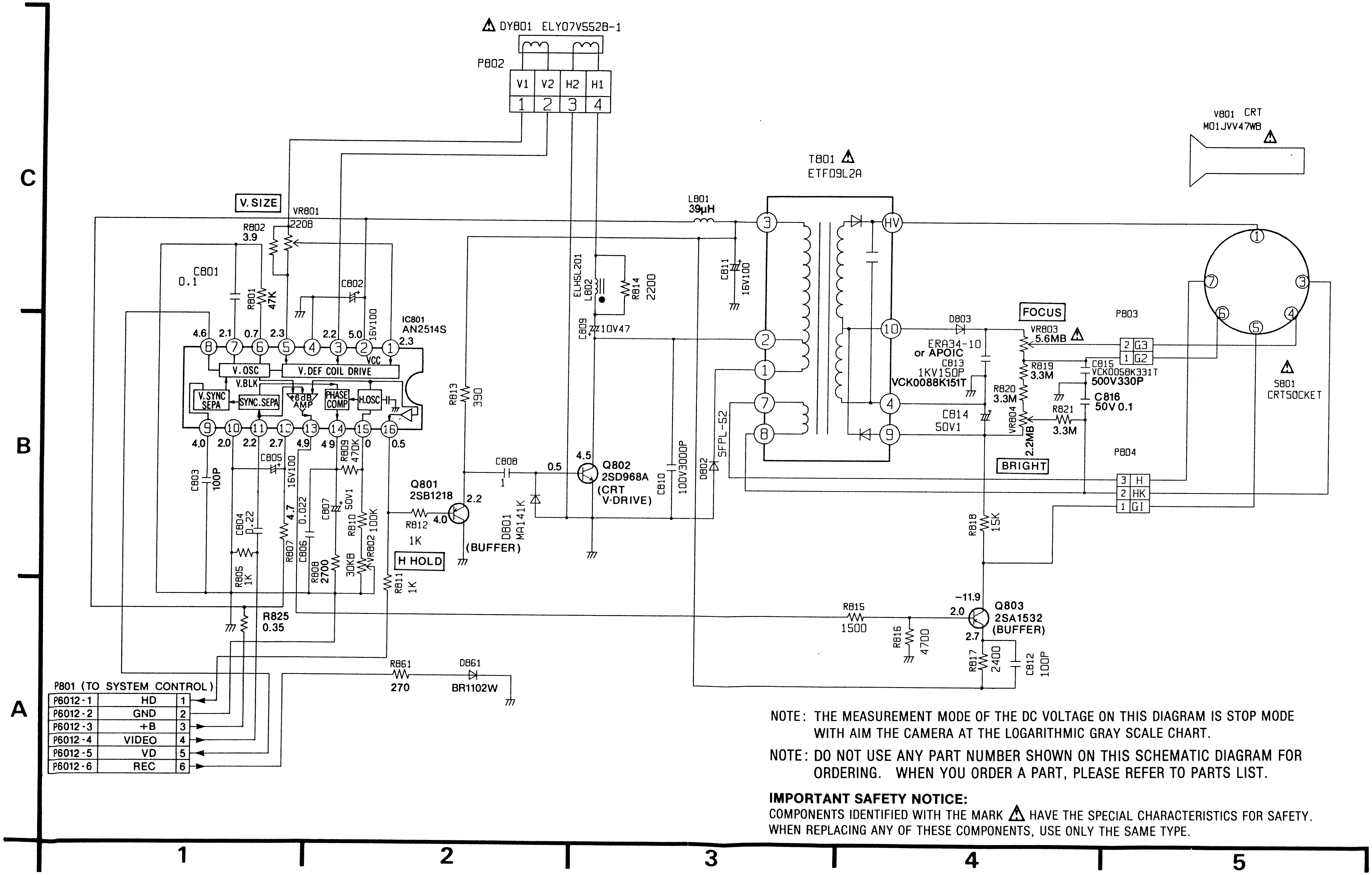


B
A
P6801
7
5
1
P6802
3
1
C6802
C6801
R6805
R6803
SW6804
HSS
SW6802
DATE/TIME
SW6803
FADE
R6837
R6804
D6802
R6808
R6831
R6832
R6835
R6834
Q6802
E C B
Q6801
E C B
Q6803
E C B
R6836
R6838
SW6806
AWT/OUT/IN
D6801
SW6807
AF/MF
FP6801
6
7
2
1
1
2
3
4

CAMERA OPERATION C.B.A.	
Transistor	
Q6801	A-2
Q6802	A-1
Q6803	A-2
Connector	
P6801	B-1
P6802	B-2
FP6801	A-1

ADDRESS INFORMATION

3-18. E.V.F. SCHEMATIC DIAGRAM


C
B
A
1
2
3
4
5
DY801 ELY07V552B-1
P802
V1 V2 H2 H1
1 2 3 4
V801 CRT
M01JVV47WB
T801
ETF09L2A
V.SIZE
VR801
220B
R802
3.9
C801
0.1
R801
47K
C802
16V100
IC801
AN2514S
V.OSC
V.DEF COIL DRIVE
VCC
V.BLK
V.SYNC SEPA
SYNC.SEPA
6dB AMP
PHASE COMP
H.OSC
C803
100P
C804
0.22
C805
16V100
R805
1K
R825
0.35
R807
4.7
C806
0.022
C807
50V1
R808
2700
R809
470K
R810
30KB
R802
100K
R811
1K
H HOLD
R813
390
Q801
2SB1218
R812
1K
(BUFFER)
C808
1
D801
MA141K
Q802
2SD968A
(CRT V-DRIVE)
ELH5L201
L802
R814
2200
C809
10V47
L801
39μH
C811
16V100
C810
100V3000P
D802
SFPL-52
HV
D803
ERA34-10
or APOIC
C813
1KV150P
VCK0088K151T
C814
50V1
FOCUS
VR803
5.6MB
R819
3.3M
R820
3.3M
VR804
2.2MB
BRIGHT
C815
VCK0058K331T
500V330P
C816
50V 0.1
R821
3.3M
P803
2 G3
1 G2
P804
3 H
2 HK
1 GI
S801
CRTSOCKET
R818
15K
R815
1500
R816
4700
Q803
2SA1532
(BUFFER)
R817
2400
C812
100P
R861
270
D861
BR1102W
P801 (TO SYSTEM CONTROL)
P6012-1 HD 1
P6012-2 GND 2
P6012-3 +B 3
P6012-4 VIDEO 4
P6012-5 VD 5
P6012-6 REC 6
4.6 2.1 0.7 2.3 2.2 5.0 2.3
4.0 2.0 2.2 2.7 4.9 4.9 0 0.5
2.2
4.0
4.5
0.5
-11.9
2.0
2.7

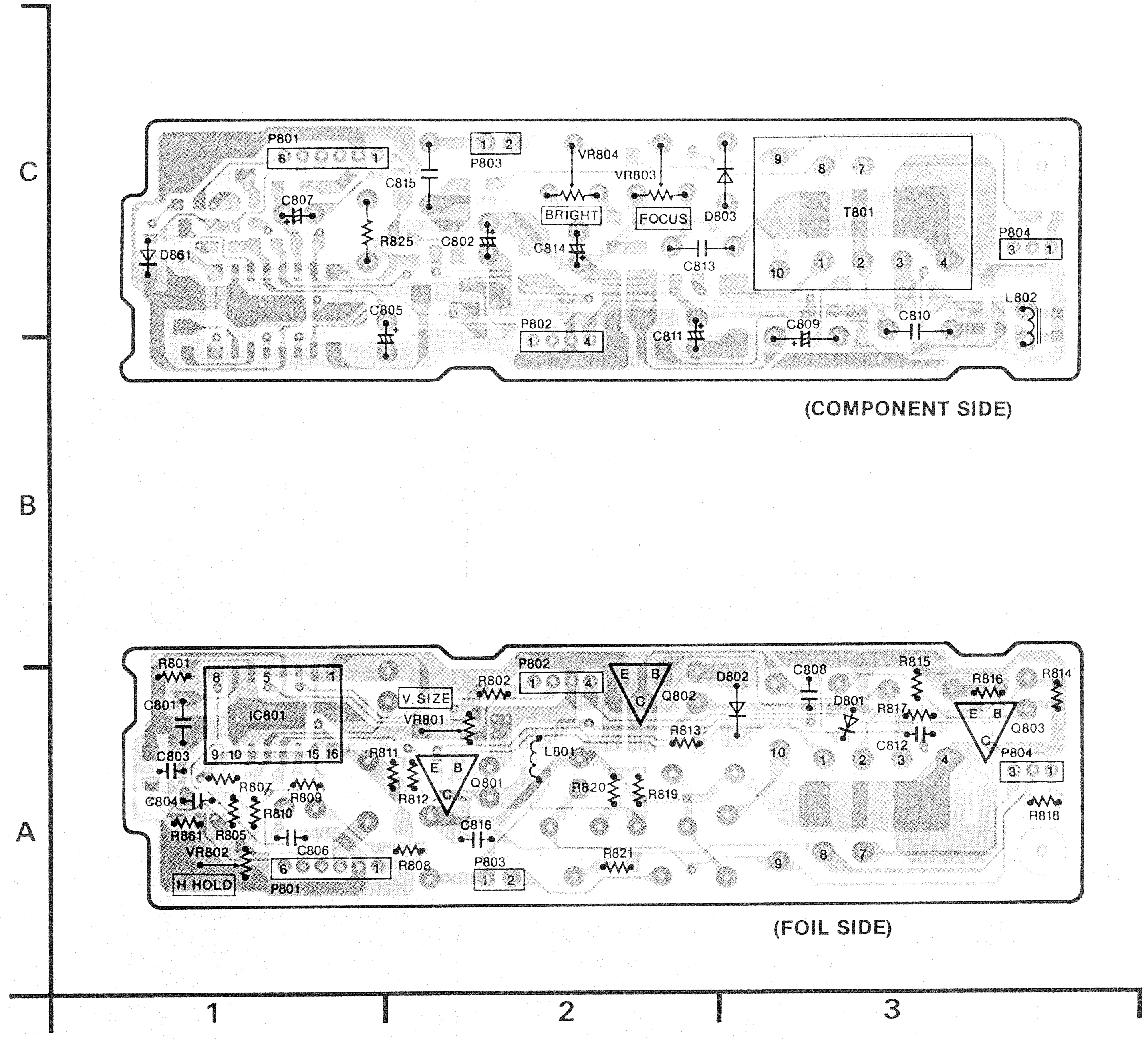
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

Back Page:
CAMERA OPERATION Section

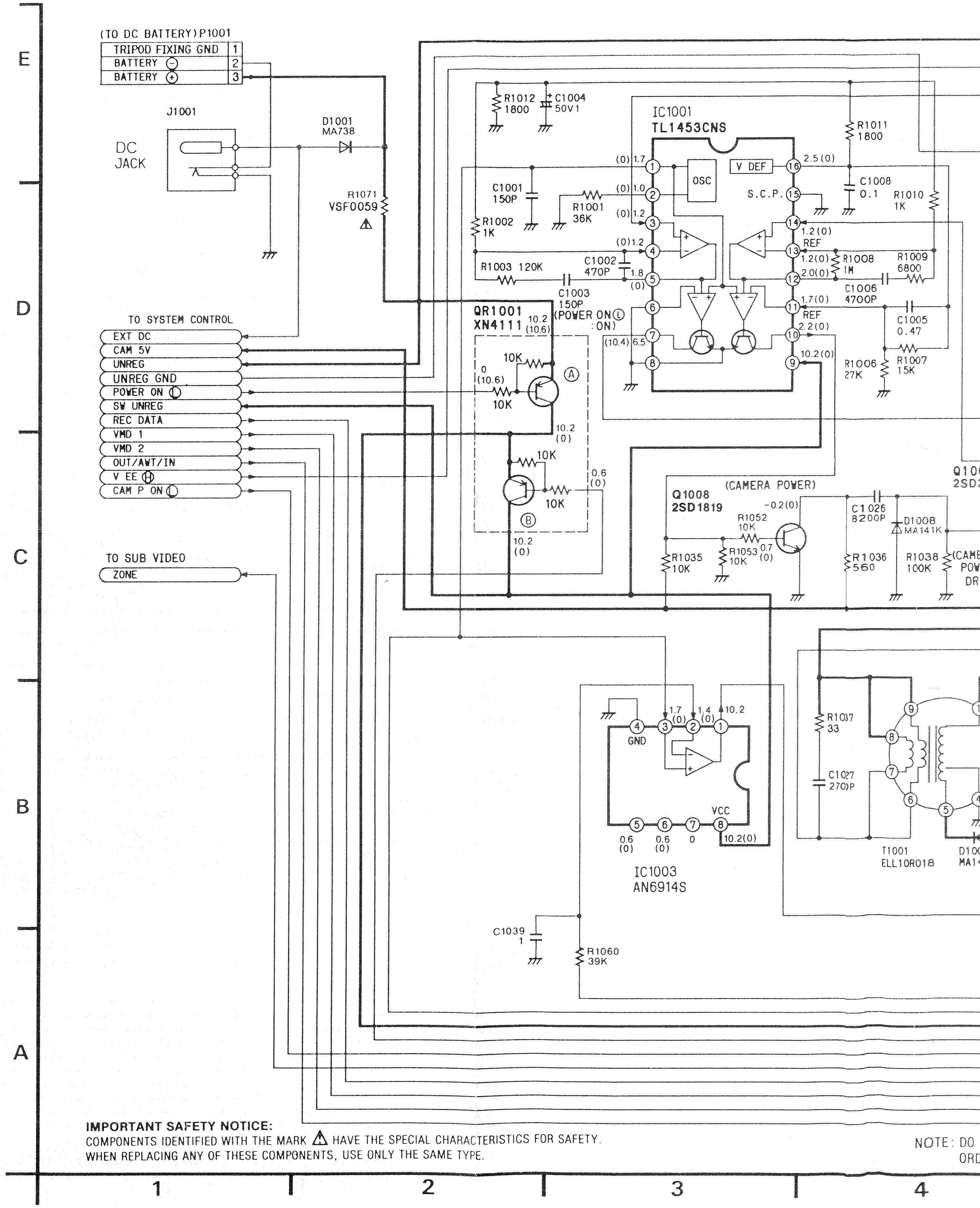
3-19. E.V.F. C.B.A.


C
B
A
1
2
3
P801
P802
P803
P804
VR801
VR802
VR803
VR804
BRIGHT
FOCUS
V.SIZE
H HOLD
T801
IC801
Q801
Q802
Q803
D801
D802
D803
D861
L801
L802
C801
C802
C803
C804
C805
C806
C807
C808
C809
C810
C811
C812
C813
C814
C815
C816
R801
R802
R805
R807
R808
R809
R810
R811
R812
R813
R814
R815
R816
R817
R818
R819
R820
R821
R825
R861
(COMPONENT SIDE)
(FOIL SIDE)

E.V.F. C.B.A.			
Transistor		**Connector**	
Q801	A-2 Ⓕ	P801	A-1 Ⓕ
Q802	A-2 Ⓕ	P801	C-1 Ⓒ
Q803	A-3 Ⓕ	P802	A-2 Ⓕ
Integrated Circuit		P802	C-2 Ⓒ
IC801	A-1 Ⓕ	P803	A-2 Ⓕ
Adjustment		P803	C-2 Ⓒ
VR801	A-2 Ⓕ	P804	A-3 Ⓕ
VR802	A-1 Ⓕ	P804	C-3 Ⓒ
VR803	C-2 Ⓒ		
VR804	C-2 Ⓒ		

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

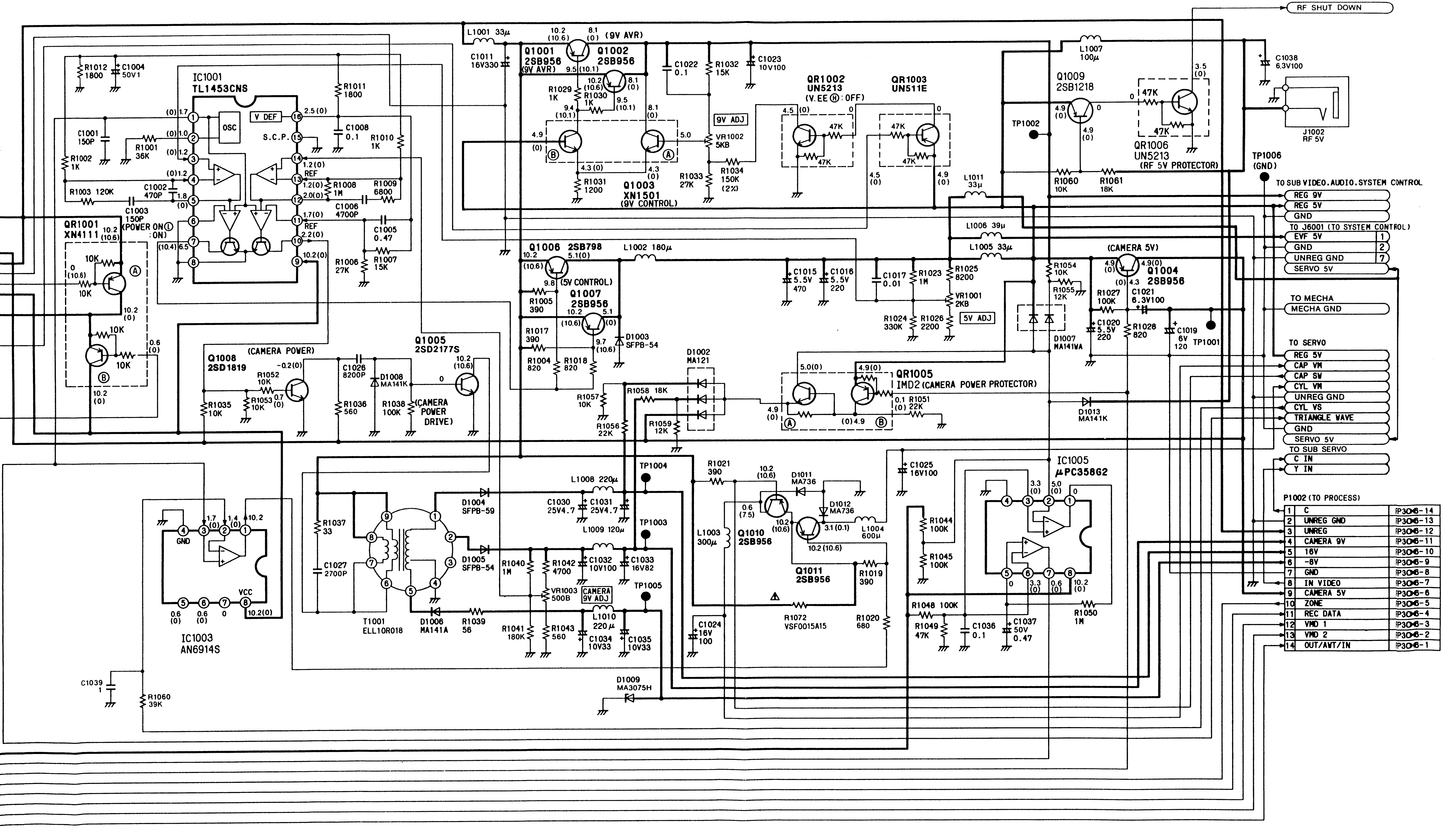
3-20. POWER SUPPLY SCHEMATIC DIAGRAM


E
D
C
B
A
1
2
3
4
(TO DC BATTERY) P1001
TRIPOD FIXING GND 1
BATTERY ⊖ 2
BATTERY ⊕ 3
J1001
DC JACK
D1001 MA738
R1071 VSF0059
TO SYSTEM CONTROL
EXT DC
CAM 5V
UNREG
UNREG GND
POWER ON Ⓛ
SW UNREG
REC DATA
VMD 1
VMD 2
OUT/AWT/IN
V EE Ⓗ
CAM P ON Ⓛ
TO SUB VIDEO
ZONE
R1012 1800
C1004 50V1
IC1001 TL1453CNS
OSC
V DEF
S.C.P.
REF
R1011 1800
C1008 0.1
R1010 1K
C1001 150P
R1001 36K
R1002 1K
R1003 120K
C1002 470P
C1003 150P
(POWER ON Ⓛ : ON)
R1008 1M
R1009 6800
C1006 4700P
C1005 0.47
R1006 27K
R1007 15K
QR1001 XN4111
10K
Ⓐ
Ⓑ
Q1008 2SD1819
(CAMERA POWER)
R1052 10K
R1053 10K
R1035 10K
C1026 8200P
D1008 MA141K
R1036 560
R1038 100K
IC1003 AN6914S
GND
VCC
C1039 1
R1060 39K
R1037 33
C1027 270P
T1001 ELL10R018
Q100
2SD

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO
ORD

MATIC DIAGRAM


TO SYSTEM CONTROL
RF SHUT DOWN
L1001 33μ
C1011 16V330
Q1001 2SB956
Q1002 2SB956
(9V AVR)
R1029 1K
R1030 1K
Q1003 XN1501 (9V CONTROL)
R1031 1200
C1022 0.1
R1032 15K
C1023 10V100
9V ADJ
VR1002 5KB
R1033 27K
R1034 150K (2%)
QR1002 UN5213 (V.EE Ⓗ: OFF)
QR1003 UN511E
L1007 100μ
Q1009 2SB1218
TP1002
QR1006 UN5213 (RF 5V PROTECTOR)
R1060 10K
R1061 18K
C1038 6.3V100
J1002 RF 5V
TP1006 (GND)
TO SUB VIDEO.AUDIO.SYSTEM CONTROL
REG 9V
REG 5V
GND
TO J6001 (TO SYSTEM CONTROL)
EVF 5V
UNREG GND
SERVO 5V
TO MECHA
MECHA GND
TO SERVO
CAP VM
CAP SW
CYL VM
CYL VS
TRIANGLE WAVE
TO SUB SERVO
C IN
Y IN
R1012 1800
C1004 50V1
IC1001 TL1453CNS
OSC
V DEF
S.C.P.
REF
R1011 1800
C1008 0.1
R1010 1K
C1001 150P
R1001 36K
R1002 1K
R1003 120K
C1002 470P
C1003 150P
R1008 1M
R1009 6800
C1006 4700P
C1005 0.47
R1006 27K
R1007 15K
QR1001 XN4111 (POWER ON Ⓛ : ON)
10K
Q1006 2SB798 (5V CONTROL)
L1002 180μ
Q1007 2SB956
R1005 390
R1017 390
R1004 820
R1018 820
D1003 SFPB-54
C1015 5.5V 470
C1016 5.5V 220
C1017 0.01
R1023 1M
R1025 8200
VR1001 2KB
R1024 330K
R1026 2200
5V ADJ
L1011 33μ
L1006 39μ
L1005 33μ
(CAMERA 5V)
Q1004 2SB956
R1054 10K
R1055 12K
R1027 100K
C1021 6.3V100
C1020 5.5V 220
R1028 820
C1019 6V 120
TP1001
D1007 MA141WA
Q1008 2SD1819 (CAMERA POWER)
R1052 10K
R1053 10K
R1035 10K
C1026 8200P
D1008 MA141K
R1036 560
R1038 100K (CAMERA POWER DRIVE)
Q1005 2SD2177S
D1002 MA121
R1058 18K
R1057 10K
R1056 22K
R1059 12K
QR1005 IMD2 (CAMERA POWER PROTECTOR)
R1051 22K
D1013 MA141K
TP1004
TP1003
TP1005
L1008 220μ
C1030 25V4.7
C1031 25V4.7
L1009 120μ
C1032 10V100
C1033 16V82
D1004 SFPB-59
D1005 SFPB-54
R1040 1M
R1042 4700
VR1003 500B
CAMERA 9V ADJ
L1010 220μ
R1041 180K
R1043 560
C1034 10V33
C1035 10V33
R1037 33
C1027 2700P
T1001 ELL10R018
D1006 MA141A
R1039 56
IC1003 AN6914S
GND
VCC
C1039 1
R1060 39K
D1009 MA3075H
R1021 390
L1003 300μ
Q1010 2SB956
D1011 MA736
D1012 MA736
L1004 600μ
Q1011 2SB956
R1019 390
R1072 VSF0015A15
R1020 680
C1024 16V 100
C1025 16V100
IC1005 μPC358G2
R1044 100K
R1045 100K
R1048 100K
R1049 47K
C1036 0.1
C1037 50V 0.47
R1050 1M
P1002 (TO PROCESS)
1 C FP306-14
2 UNREG GND FP306-13
3 UNREG FP306-12
4 CAMERA 9V FP306-11
5 16V FP306-10
6 -8V FP306-9
7 GND FP306-8
8 IN VIDEO FP306-7
9 CAMERA 5V FP306-6
10 ZONE FP306-5
11 REC DATA FP306-4
12 VMD 1 FP306-3
13 VMD 2 FP306-2
14 OUT/AWT/IN FP306-1

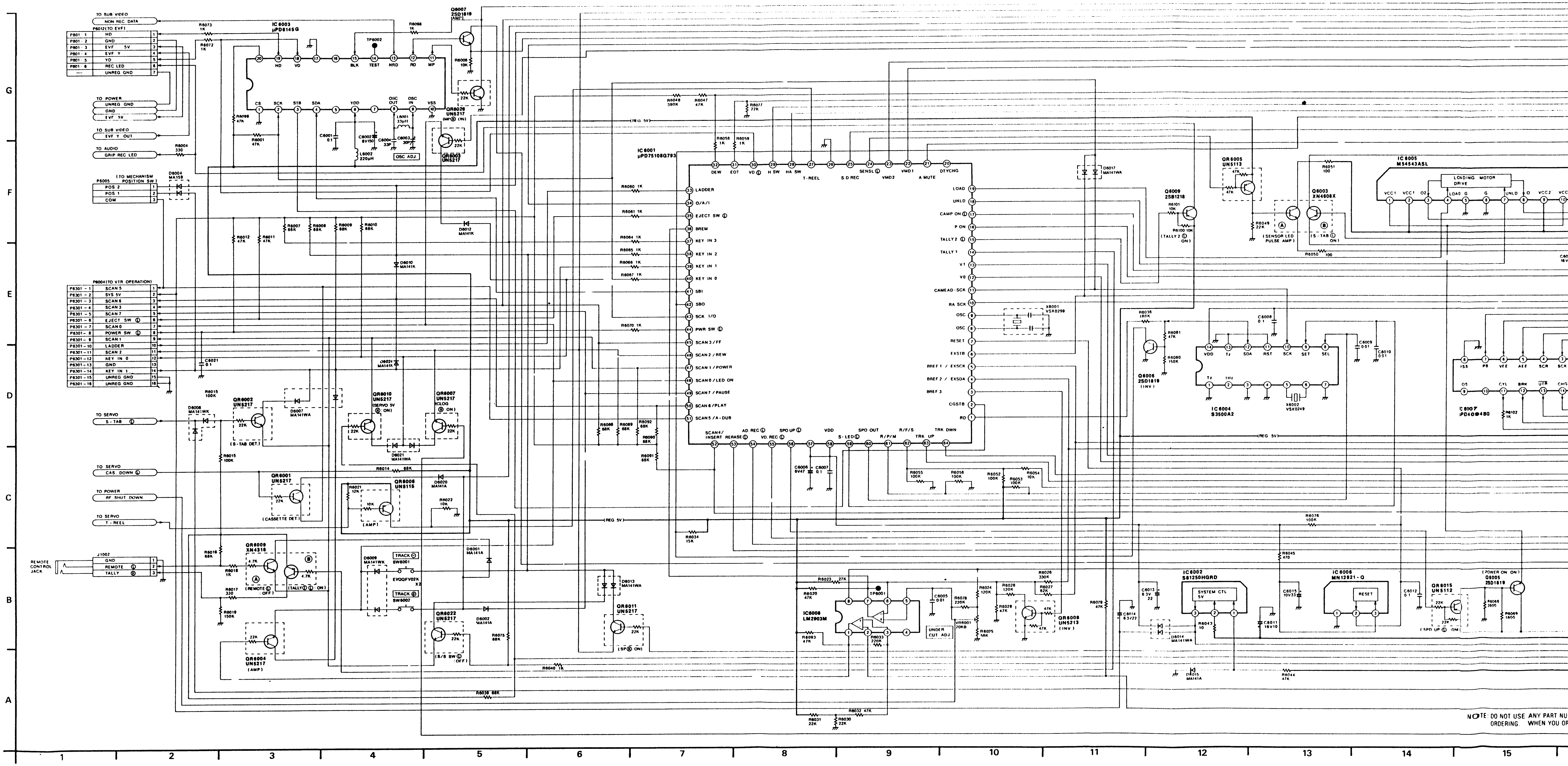
SPECIAL CHARACTERISTICS FOR SAFETY.
LY THE SAME TYPE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS POWER OFF MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

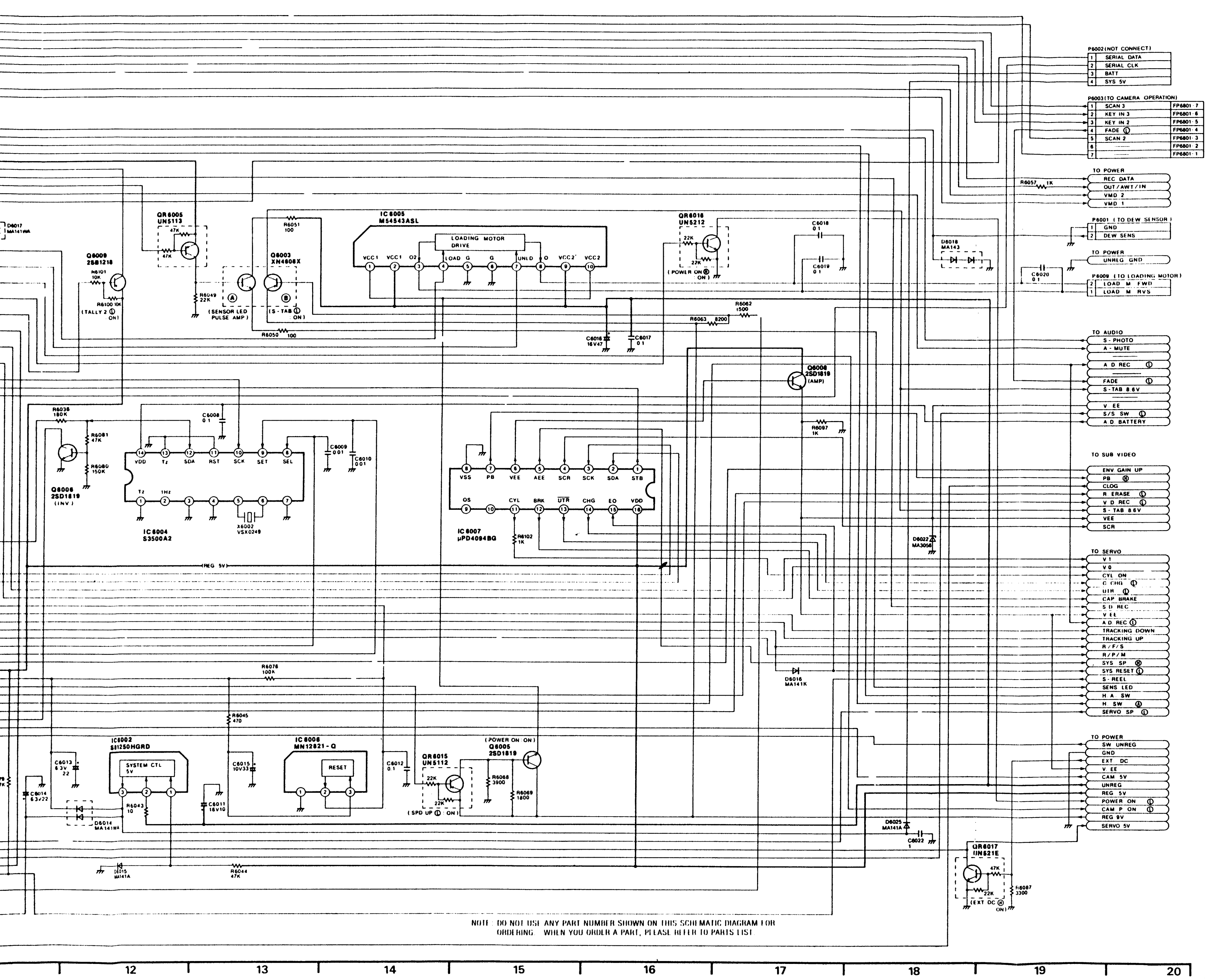
2 3 4 5 6 7 8 9

3-21. SYSTEM CONTROL SCHEMATIC DIAGRAM


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
TO SUB VIDEO
NON REC DATA
P6012 (TO EVF)
HD
GND
EVF 5V
EVF Y
VD
REC LED
UNREG GND
TO POWER
UNREG GND
GND
EVF 5V
TO SUB VIDEO
EVF Y OUT
TO AUDIO
GRIP REC LED
TO MECHANISM POSITION SW
P6005
POS 2
POS 1
COM
P6004 (TO VTR OPERATION)
SCAN 5
SYS 5V
SCAN 6
SCAN 3
SCAN 7
EJECT SW
SCAN 0
POWER SW
SCAN 1
LADDER
SCAN 2
KEY IN 0
GND
KEY IN 1
UNREG GND
UNREG GND
TO SERVO
S-TAB
TO SERVO
CAS DOWN
TO POWER
RF SHUT DOWN
TO SERVO
T-REEL
REMOTE CONTROL JACK
J1002
GND
REMOTE
TALLY
IC6003
μPD6145G
Q6007
2SD1819
(AMP)
QR6026
UN5217
QR6003
UN5217
TP6002
OSC ADJ.
IC6001
μPD75108G793
LADDER
O/A/I
EJECT SW
BREM
KEY IN 3
KEY IN 2
KEY IN 1
KEY IN 0
SBI
SBO
SCK I/O
PWR SW
SCAN 3 / FF
SCAN 2 / REW
SCAN 1 / POWER
SCAN 0 / LED ON
SCAN 7 / PAUSE
SCAN 6 / PLAY
SCAN 5 / A-DUB
SCAN4 / INSERT
AD REC
VD. REC
SPO UP
VDD
S-LED
SPO OUT
R/P/M
R/F/S
TRK UP
TRK DOWN
DEW
EOT
VD
H SW
HA SW
T-REEL
S D REC
SENSL
VMD2
VMD1
A MUTE
DTYCNG
LOAD
UNLD
CAMP ON
P ON
TALLY 2
TALLY 1
VT
VO
CAMEAD-SCK
RA SCK
OSC
OSC
RESET
EXSTB
BREF 1 / EXSCK
BREF 2 / EXSDA
BREF 3
CGSTB
RD
X6001
VSX0299
D6017
MA141WA
QR6005
UN5113
Q6009
2SB1218
(TALLY 2 ON)
Q6003
XN4608X
(SENSOR LED PULSE AMP)
(S-TAB ON)
IC6005
M54543ASL
LOADING MOTOR DRIVE
Q6006
2SD1819
(INV)
IC6004
S3500A2
X6002
VSX0249
IC6007
μPD6048G
D6004
MA159
D6008
MA141WK
QR6002
UN5217
(S-TAB DET.)
D6007
MA141WA
QR6010
UN5217
(SERVO 5V ON)
QR6007
UN5217
(CLOG ON)
D6021
MA141WA
QR6001
UN5217
(CASSETTE DET.)
QR6006
UN5115
(AMP)
D6020
MA141A
QR6009
XN4316
(REMOTE OFF)
(TALLY ON)
QR6004
UN5217
(AMP)
D6009
MA141WK
TRACK
SW6001
EVQQFV02K
SW6002
QR6022
UN5217
(S/S SW OFF)
D6001
MA141A
D6002
MA141A
D6013
MA141WA
QR6011
UN5217
(SP ON)
IC6008
LM2903M
TP6001
UNDER CUT ADJ
VR6001
20KB
QR6008
UN5213
(INV)
IC6002
S81250HGRD
SYSTEM CTL 5V
D6014
MA141WA
D6015
MA141A
IC6006
MN12821-Q
RESET
QR6015
UN5112
(SPO UP ON)
(POWER ON)
Q6005
2SD1819
(REG 5V)

NOTE: DO NOT USE ANY PART NU
ORDERING. WHEN YOU OR

Back Page:
E.V.F. & POWER SUPPLY Section


P6002(NOT CONNECT)
1 SERIAL DATA
2 SERIAL CLK
3 BATT
4 SYS 5V
P6003(TO CAMERA OPERATION)
1 SCAN 3 FP6801·7
2 KEY IN 3 FP6801·6
3 KEY IN 2 FP6801·5
4 FADE Ⓛ FP6801·4
5 SCAN 2 FP6801·3
6 FP6801·2
7 FP6801·1
TO POWER
REC DATA
OUT/AWT/IN
VMD 2
VMD 1
R6057 1K
P6001 (TO DEW SENSOR)
1 GND
2 DEW SENS
TO POWER
UNREG GND
C6020 0.1
P6009 (TO LOADING MOTOR)
2 LOAD M FWD
1 LOAD M RVS
TO AUDIO
S-PHOTO
A-MUTE
A.D. REC Ⓛ
FADE Ⓛ
S-TAB 8.6V
V. EE
S/S SW Ⓛ
A.D. BATTERY
TO SUB VIDEO
ENV. GAIN UP
PB Ⓗ
CLOG
R. ERASE Ⓛ
V D REC Ⓛ
S-TAB 8.6V
VEE
SCR
TO SERVO
V 1
V 0
CYL ON
C CHG Ⓛ
UTR Ⓛ
CAP BRAKE
S D REC
V EE
A.D. REC Ⓛ
TRACKING DOWN
TRACKING UP
R/F/S
R/P/M
SYS SP Ⓗ
SYS RESET Ⓛ
S-REEL
SENS LED
H. A. SW
H. SW Ⓐ
SERVO SP Ⓛ
TO POWER
SW UNREG
GND
EXT. DC
V. EE
CAM 5V
UNREG
REG 5V
POWER ON Ⓛ
CAM P ON Ⓛ
REG 9V
SERVO 5V
QR6017 UN521E
47K
22K
(EXT DC Ⓗ ON)
R6087 3300
IC6005 M54543ASL
LOADING MOTOR DRIVE
VCC1 VCC1 O2 LOAD G G UNLD O VCC2 VCC2
QR6005 UN5113
QR6018 UN5212
(POWER ON Ⓗ ON)
Q6009 2SB1218
(TALLY 2 Ⓛ ON)
Q6003 XN4606X
(SENSOR LED PULSE AMP)
(S-TAB Ⓛ ON)
R6051 100
R6049 22K
R6050 100
R6062 1500
R6063 8200
C6016 16V47
C6017 0.1
C6018 0.1
C6019 0.1
D6018 MA143
Q6006 2SD1819 (AMP)
R6087 1K
Q6008 2SD1819 (INV)
R6038 180K
R6081 47K
R6080 150K
C6008 0.1
C6009 0.01
C6010 0.01
VDD Tz SDA RST SCK SET SEL
Tz 1Hz
X6002 VSX0249
IC6004 S3500A2
VSS PB VEE AEE SCR SCK SDA STB
OS CYL BRK UTR CHG EO VDD
IC6007 µPD4094BG
R6102 1K
D6022 MA3056
(REG 5V)
R6076 100K
D6016 MA141K
R6045 470
IC6002 S81250HGRD
SYSTEM CTL 5V
IC6006 MN12821-Q
RESET
C6013 6.3V 22
C6014 6.3V22
D6014 MA141WA
R6043 10
C6015 10V33
C6011 16V10
C6012 0.1
QR6015 UN5112
(SPD UP Ⓛ ON)
R6068 3900
R6069 1800
(POWER ON ON)
Q6005 2SD1819
D6025 MA141A
C6022 1
D6015 MA141A
R6044 47K
D6017 MA141WA
12
13
14
15
16
17
18
19
20

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

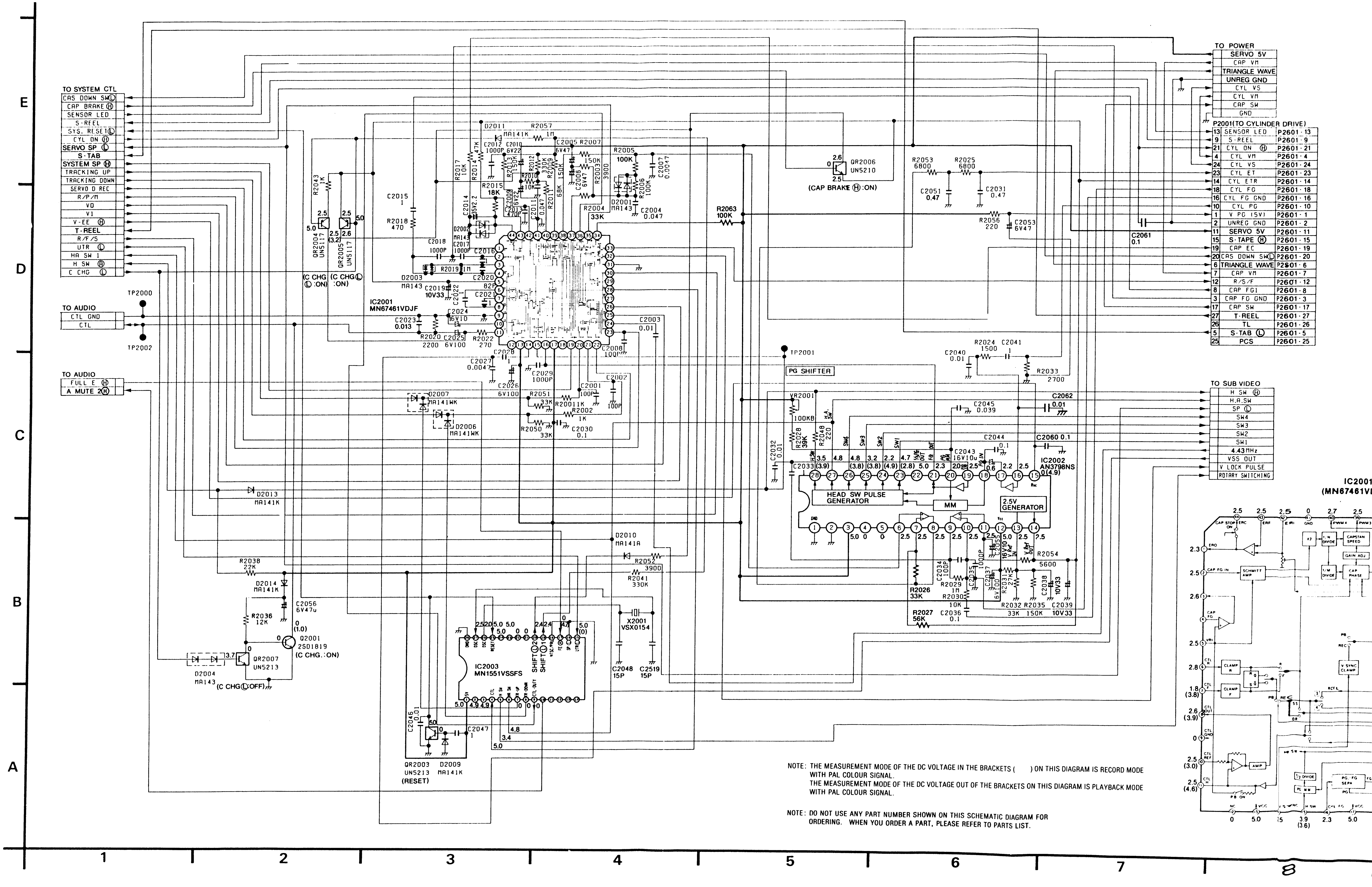
SYSTEM CONTROL Section ICs VOLTAGE CHART

REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	2.1	0.2	4.7	4.7	4.7	0	4.7	2.5	2.4	4.7	4.7	4.8	0	4.8	4.8	4.7	0.1	0	0	4.8
PLAY	0	0.3	4.7	4.7	4.7	0	4.7	2.5	2.4	4.8	4.7	4.8	0	4.8	4.8	4.7	4.8	0	0	4.8
F.F	2.4	0.3	4.7	4.7	4.7	0	4.7	2.5	2.4	4.8	4.7	4.8	4.8	4.8	4.8	4.7	0.1	0	0	4.8
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	4.7	0	0	4.8	0	0	5.0	4.9	4.4	0	0	0	4.7	0.5	4.7	5.0	0.8	0.8	4.6	4.6
PLAY	0	0	0	4.8	0	0	5.0	4.9	4.4	0	0	0	4.7	0.5	4.7	5.0	0.8	0.8	4.6	4.6
F.F	4.7	0	0	4.8	0	0	5.0	4.9	4.4	0.6	0	0	4.7	0.7	4.7	5.0	0.9	0.8	4.6	4.6
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	2.6	3.0	4.5	4.7	4.7	4.7	0.5	0.3	1.4	4.7	4.4	1.2	8.3	8.3	2.7	8.3	4.8	4.8	0	0
PLAY	4.6	4.1	4.6	4.7	4.6	4.6	0.5	0	1.4	4.7	0.1	4.4	8.7	8.7	2.7	8.7	4.8	4.8	0	0
F.F	2.6	3.0	4.5	4.7	4.7	4.7	0.5	0.3	1.4	4.7	4.4	1.2	8.3	8.3	2.7	8.3	4.8	4.8	0	0
REF. NO.	IC6001										IC6002									
MODE	61	62	63	64							1	2	3							
STOP	4.8	0	0	0							0.5	10.1	5.4							
PLAY	2.5	2.5	0	0							0.5	10.1	5.4							
F.F	4.8	2.5	0	0							0.5	10.1	5.4							
REF. NO.	IC6003																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	4.6	0.3	3.0	0	5.0	1.7	2.4	2.4	0	0	0	0	0	0	0	0	0	0	5.0
PLAY	0	4.6	0.3	4.7	0	5.0	1.6	2.3	2.3	0	0	0	0	0	0	0	0	0	0	5.0
F.F	0	4.6	0.3	2.8	0	5.0	1.6	2.4	2.4	0	0	0	0	0	0	0	0	0	0	5.0
REF. NO.	IC6004																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
STOP	0	0	0	0	0	0	0	0	0	4.8	0	0.6	0	0						
PLAY	0	0	0	0	0	0	0	0	0	4.8	0	0.6	0	0						
F.F	0	0.1	0	0	0	0	0	0	0	4.7	0	0.6	0	0						
REF. NO.	IC6005										IC6006									
MODE	1	2	3	4	5	6	7	8	9	10	1	2	3							
STOP	5.1	10.2	0	0	0	0	0	0	10.2	5.1	0	4.7	4.8							
PLAY	5.3	10.1	0	0	0	0	0	0	10.1	5.3	0	4.7	4.8							
F.F	5.1	10.2	0	0	0	0	0	0	10.2	5.1	0	4.7	4.8							
REF. NO.	IC6007																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
STOP	0	4.7	4.7	0	5.0	5.0	0	0	0	4.3	0	0	5.0	0	5.0	5.0				
PLAY	0	4.7	4.7	0	5.0	5.0	4.9	0	4.6	5.0	5.0	0	5.0	5.0	5.0	5.0				
F.F	0	4.7	4.7	0	5.0	5.0	0	0	0	4.7	0	0	5.0	5.0	5.0	5.0				
REF. NO.	IC6008																			
MODE	1	2	3	4	5	6	7	8												
STOP	0	4.7	2.0	0	3.6	3.1	5.0	10.1												
PLAY	2.0	4.7	2.4	0	3.5	3.1	5.0	10.1												
F.F	2.0	4.7	2.4	0	3.5	3.1	5.0	10.1												

SYSTEM CONTROL TRANSISTORs VOLTAGE CHART

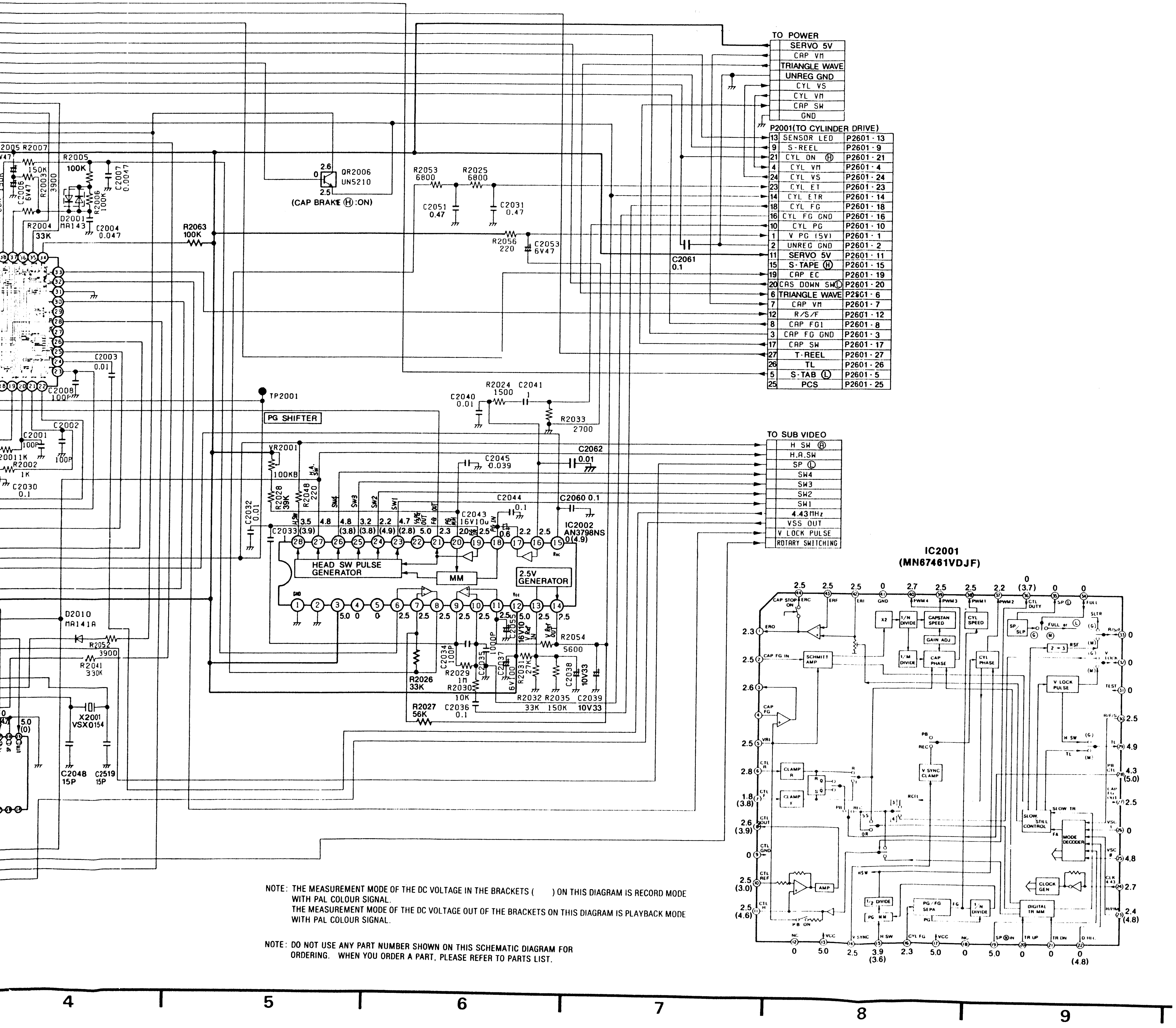
REF. NO.	Q6003(A)			Q6003(B)			Q6005			Q6006			Q6007			Q6008		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	0	10.2	0	8.3	8.3	7.6	5.1	8.3	5.7	0	3.2	0.2	0	5.0	0	4.3	5.0	5.0
PLAY	0	10.1	0	8.7	8.7	8.0	5.3	8.7	6.0	0	4.3	0	0	0	0	0.1	5.0	0
F.F	0	10.2	0	8.3	8.3	7.6	5.1	8.3	5.7	0	3.2	0.2	0	5.0	0	4.3	5.0	5.0
REF. NO.	Q6009																	
MODE	E	C	B															
STOP	5.0	0	4.9															
PLAY	0	4.4	0															
F.F	5.0	0	4.9															
REF. NO.	QR6001			QR6002			QR6003			QR6004			QR6005			QR6006		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	2.2	3.6	0	0.5	2.0	0.4	0.3	4.4	0.2	0.3	4.3	2.1	5.0	0	4.8	5.0	0	4.9
PLAY	0.2	2.1	0	0.5	2.0	0.4	0.3	4.4	0.1	0.3	4.3	2.0	5.0	0	4.8	5.0	0	4.9
F.F	4.4	2.1	0	0.5	2.0	0.4	0.3	4.4	0	0.3	4.3	2.1	5.0	0	4.8	5.0	5.0	4.9
REF. NO.	QR6007			QR6008			QR6009(A)			QR6009(B)			QR6010			QR6011		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
STOP	4.7	4.6	5.0	0	0	4.7	0.4	0.4	1.4	5.0	0	4.8	0.4	4.3	0	4.7	2.1	0
PLAY	4.7	4.6	5.0	0	0	4.7	0.4	0.4	1.3	5.0	0	4.8	0.4	4.3	0	4.6	2.0	0
F.F	4.7	4.6	5.0	0	0	4.7	0.4	0.4	1.4	5.0	0	4.8	0.4	4.3	0	4.7	4.4	4.8
REF. NO.	QR6015			QR6016			QR6017			QR6022			QR6026					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	8.3	5.7	8.3	0	0	4.7	0	0	10.5	0.5	0.4	1.7	0	0	3.4			
PLAY	8.3	6.0	8.7	0	0	4.8	0	0	10.5	0.5	0.4	1.7	0	0	3.4			
F.F	8.3	5.7	8.3	0	0	4.7	0	0	10.5	0.5	0.4	1.7	0	0	3.4			

3-22. SERVO SCHEMATIC DIAGRAM


TO SYSTEM CTL
CAS DOWN SW(L)
CAP BRAKE (H)
SENSOR LED
S-REEL
SYS. RESET(L)
CYL ON (H)
SERVO SP (L)
S-TAB
SYSTEM SP (H)
TRACKING UP
TRACKING DOWN
SERVO D REC
R/P/M
VD
V1
V-EE (H)
T-REEL
R/F/S
UTR (L)
HA SW 1
H SW (H)
C CHG (L)
TO AUDIO
CTL GND
CTL
TP2000
TP2002
TO AUDIO
FULL E (H)
A MUTE 2(H)
TO POWER
SERVO 5V
CAP VM
TRIANGLE WAVE
UNREG GND
CYL VS
CYL VM
CAP SW
GND
P2001(TO CYLINDER DRIVE)
SENSOR LED P2601-13
S-REEL P2601-9
CYL ON (H) P2601-21
CYL VM P2601-4
CYL VS P2601-24
CYL ET P2601-23
CYL ETR P2601-14
CYL FG P2601-18
CYL FG GND P2601-16
CYL PG P2601-10
V PG (5V) P2601-1
UNREG GND P2601-2
SERVO 5V P2601-11
S-TAPE (H) P2601-15
CAP EC P2601-19
CAS DOWN SW(L) P2601-20
TRIANGLE WAVE P2601-6
CAP VM P2601-7
R/S/F P2601-12
CAP FG1 P2601-8
CAP FG GND P2601-3
CAP SW P2601-17
T-REEL P2601-27
TL P2601-26
S-TAB (L) P2601-5
PCS P2601-25
TO SUB VIDEO
H SW (H)
H.A.SW
SP (L)
SW4
SW3
SW2
SW1
4.43MHz
VSS OUT
V LOCK PULSE
ROTARY SWITCHING
IC2001
MN67461VDJF
QR2006
UN5210
(CAP BRAKE (H):ON)
QR2004
UN5117
QR2005
UN5117
(C CHG (L):ON)
(C CHG(L):ON)
TP2001
PG SHIFTER
IC2002
AN3798NS
HEAD SW PULSE GENERATOR
MM
2.5V GENERATOR
IC2003
MN1551VSSFS
X2001
VSX0154
QR2003
UN5213
D2009
MA141K
(RESET)
Q2001
2SD1819
(C CHG.:ON)
QR2007
UN5213
D2004
MA143
(C CHG(L)OFF)
D2013
MA141K
D2014
MA141K
D2010
MA141A
D2007
MA141WK
D2006
MA141WK
IC2001
(MN67461V

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

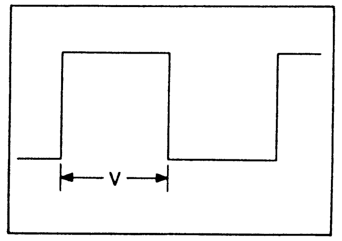
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.


TO POWER
SERVO 5V
CAP VM
TRIANGLE WAVE
UNREG GND
CYL VS
CYL VM
CAP SW
GND
P2001(TO CYLINDER DRIVE)
13 SENSOR LED P2601·13
9 S-REEL P2601·9
21 CYL ON Ⓗ P2601·21
4 CYL VM P2601·4
24 CYL VS P2601·24
23 CYL ET P2601·23
14 CYL ETR P2601·14
18 CYL FG P2601·18
16 CYL FG GND P2601·16
10 CYL PG P2601·10
1 V PG (5V) P2601·1
2 UNREG GND P2601·2
11 SERVO 5V P2601·11
15 S·TAPE Ⓗ P2601·15
19 CAP EC P2601·19
20 CAS DOWN SWⓁ P2601·20
6 TRIANGLE WAVE P2601·6
7 CAP VM P2601·7
12 R/S/F P2601·12
8 CAP FG1 P2601·8
3 CAP FG GND P2601·3
17 CAP SW P2601·17
27 T-REEL P2601·27
26 TL P2601·26
5 S·TAB Ⓛ P2601·5
25 PCS P2601·25
TO SUB VIDEO
H SW Ⓐ
H.A.SW
SP Ⓛ
SW4
SW3
SW2
SW1
4.43MHz
VSS OUT
V LOCK PULSE
ROTARY SWITCHING
QR2006 UN5210
(CAP BRAKE Ⓗ:ON)
R2053 6800
R2025 6800
C2051 0.47
C2031 0.47
R2056 220
C2053 6V47
R2063 100K
C2061 0.1
R2005 100K
R2003 3900
R2006 100K
C2007 0.0047
D2001 MA143
R2004 33K
C2004 0.047
C2003 0.01
C2008 100P
C2002 100P
C2001 100P
R2002 1K
C2030 0.1
TP2001
PG SHIFTER
R2024 1500
C2041 1
C2040 0.01
R2033 2700
C2062 0.01
C2045 0.039
VR2001 100KB
R2028 39K
R2048 220
C2032 0.01
C2033
C2044 0.1
C2060 0.1
C2043 16V10u
IC2002 AN3798NS
HEAD SW PULSE GENERATOR
MM
2.5V GENERATOR
D2010 MA141A
R2052 3900
R2041 330K
X2001 VSX0154
C2048 15P
C2519 15P
R2026 33K
R2027 56K
C2034 100P
R2029 1M
R2030 10K
C2036 0.1
R2031 27K
R2032 33K
R2035 150K
R2054 5600
C2038 10V33
C2039 10V33
IC2001 (MN67461VDJF)
CAP STOP ERC ON
ERO
CAP FG IN
SCHMITT AMP
CAP FG
VRI
CTL R
CLAMP
CTL OUT
CTL GND
CTL REF
PB ON
1/M DIVIDE
CAPSTAN SPEED
GAIN ADJ
CAP PHASE
CYL SPEED
CYL PHASE
V LOCK PULSE
V SYNC CLAMP
SLOW STILL CONTROL
SLOW TR
MODE DECODER
CLOCK GEN
DIGITAL TR MM
PG/FG SEPA
PG MM
1/N DIVIDE
4
5
6
7
8
9

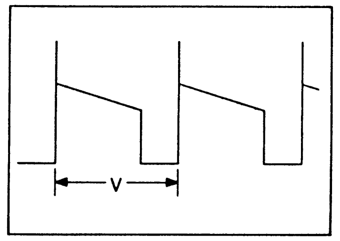
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

SERVO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 2000 Series)



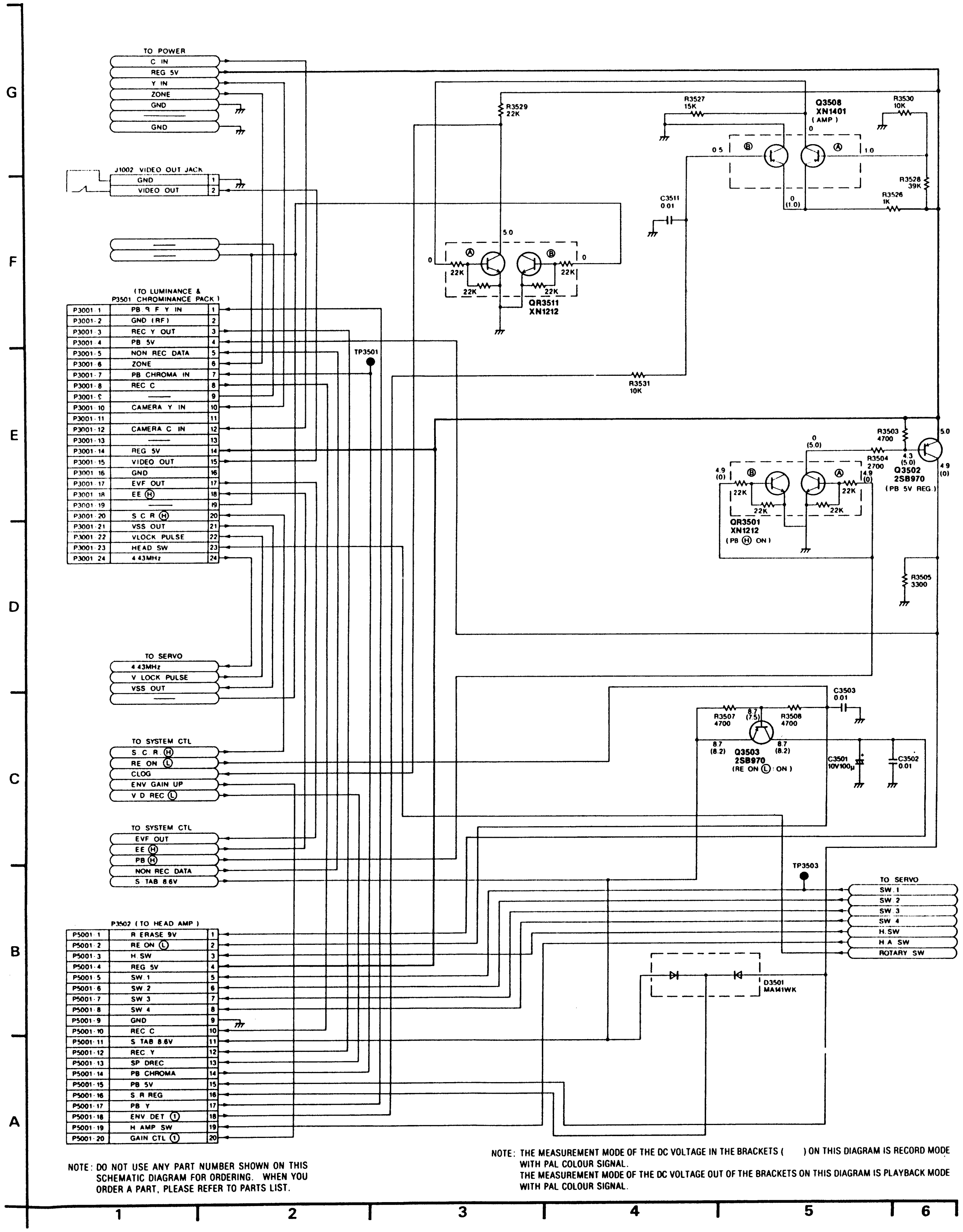
TP2001 REC/PLAY
5.0V/10msec. div. 5.0Vp-p



TP2002 REC
5.0V/10msec. div. 3.2Vp-p

Next Page:
SUB VIDEO & AUDIO Section

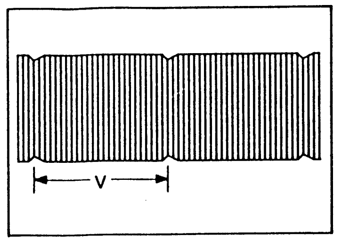
3-23. SUB VIDEO SCHEMATIC DIAGRAM


G
F
E
D
C
B
A
1
2
3
4
5
6
TO POWER
C IN
REG 5V
Y IN
ZONE
GND
GND
J1002 VIDEO OUT JACK
GND
VIDEO OUT
(TO LUMINANCE & P3501 CHROMINANCE PACK)
P3001-1 PB R F Y IN 1
P3001-2 GND (RF) 2
P3001-3 REC Y OUT 3
P3001-4 PB 5V 4
P3001-5 NON REC DATA 5
P3001-6 ZONE 6
P3001-7 PB CHROMA IN 7
P3001-8 REC C 8
P3001-9 9
P3001-10 CAMERA Y IN 10
P3001-11 11
P3001-12 CAMERA C IN 12
P3001-13 13
P3001-14 REG 5V 14
P3001-15 VIDEO OUT 15
P3001-16 GND 16
P3001-17 EVF OUT 17
P3001-18 EE Ⓗ 18
P3001-19 19
P3001-20 S C R Ⓗ 20
P3001-21 VSS OUT 21
P3001-22 VLOCK PULSE 22
P3001-23 HEAD SW 23
P3001-24 4.43MHz 24
TO SERVO
4.43MHz
V LOCK PULSE
VSS OUT
TO SYSTEM CTL
S C R Ⓗ
RE ON Ⓛ
CLOG
ENV GAIN UP
V D REC Ⓛ
TO SYSTEM CTL
EVF OUT
EE Ⓗ
PB Ⓗ
NON REC DATA
S TAB 8.6V
P3502 (TO HEAD AMP)
P5001-1 R ERASE 9V 1
P5001-2 RE ON Ⓛ 2
P5001-3 H SW 3
P5001-4 REG 5V 4
P5001-5 SW 1 5
P5001-6 SW 2 6
P5001-7 SW 3 7
P5001-8 SW 4 8
P5001-9 GND 9
P5001-10 REC C 10
P5001-11 S TAB 8.6V 11
P5001-12 REC Y 12
P5001-13 SP DREC 13
P5001-14 PB CHROMA 14
P5001-15 PB 5V 15
P5001-16 S R REG 16
P5001-17 PB Y 17
P5001-18 ENV DET ① 18
P5001-19 H AMP SW 19
P5001-20 GAIN CTL ① 20
R3529 22K
R3527 15K
Q3508 XN1401 (AMP)
R3530 10K
R3528 39K
R3526 1K
C3511 0.01
QR3511 XN1212
TP3501
R3531 10K
R3503 4700
R3504 2700
Q3502 2SB970 (PB 5V REG)
QR3501 XN1212 (PB Ⓗ ON)
R3505 3300
C3503 0.01
R3507 4700
R3508 4700
Q3503 2SB970 (RE ON Ⓛ : ON)
C3501 10V100μ
C3502 0.01
TP3503
D3501 MA141WK
TO SERVO
SW 1
SW 2
SW 3
SW 4
H SW
H A SW
ROTARY SW

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

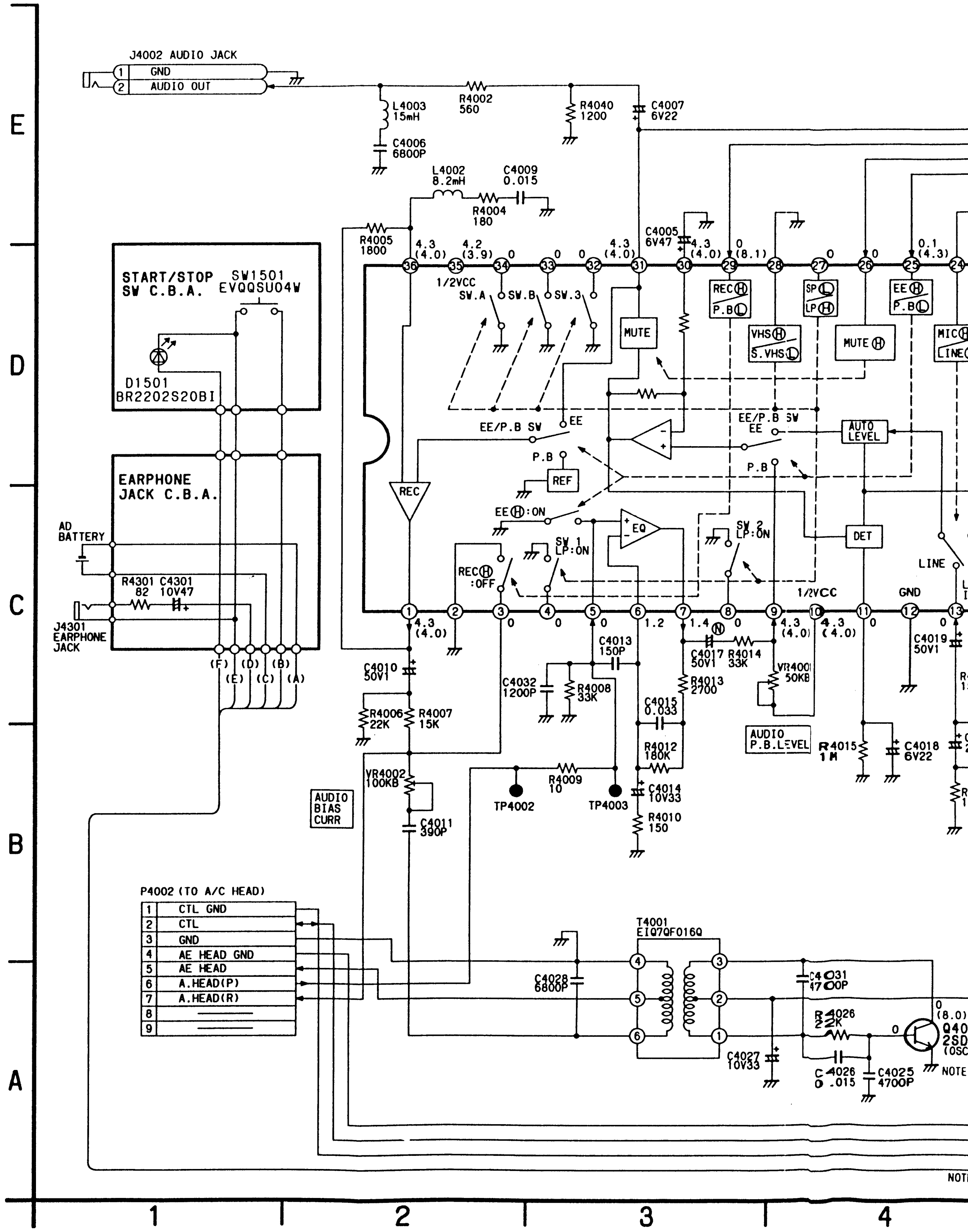
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

SUB VIDEO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 3500 Series)



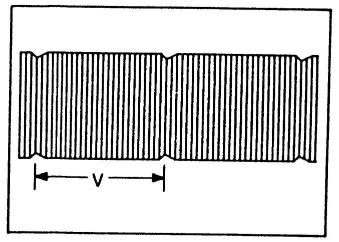
TP3501 PLAY
0.1V/10msec. div. 0.25Vp-p

3-24. AUDIO SCHEMATIC DIAGRAM

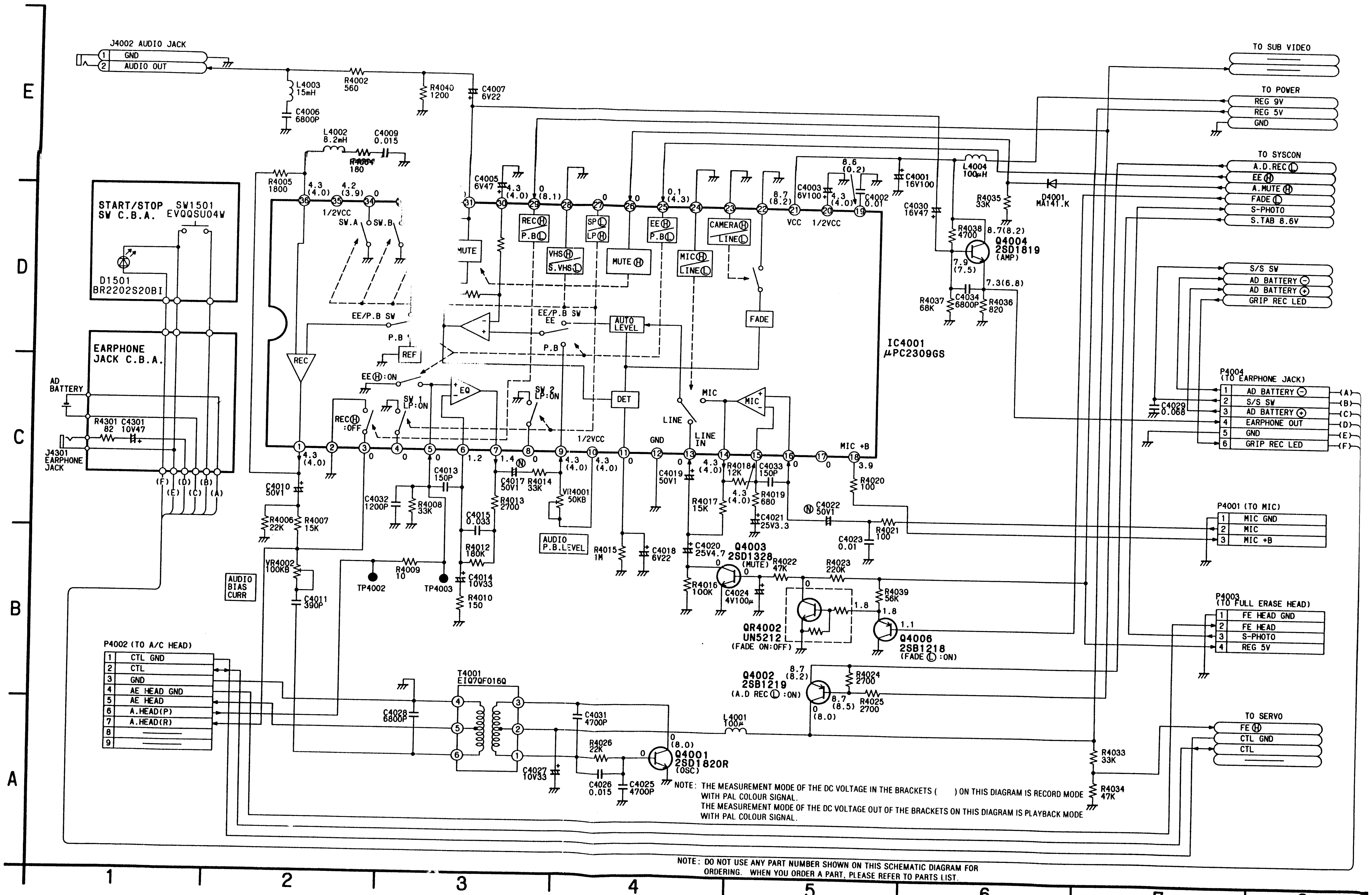

E
D
C
B
A
1
2
3
4
J4002 AUDIO JACK
GND
AUDIO OUT
L4003 15mH
R4002 560
R4040 1200
C4007 6V22
C4006 6800P
L4002 8.2mH
C4009 0.015
R4004 180
R4005 1800
C4005 6V47
START/STOP SW1501
SW C.B.A. EVQQSU04W
D1501 BR2202S20BI
EARPHONE JACK C.B.A.
AD BATTERY
R4301 82
C4301 10V47
J4301 EARPHONE JACK
1/2VCC
SW.A
SW.B
SW.3
MUTE
REC Ⓗ
P.B Ⓛ
SP Ⓛ
LP Ⓗ
EE Ⓗ
P.B Ⓛ
VHS Ⓗ
S.VHS Ⓛ
MUTE Ⓗ
MIC Ⓗ
LINE
EE/P.B SW
EE
P.B
REF
EE/P.B SW
EE
P.B
AUTO LEVEL
REC
EE Ⓗ : ON
EQ
SW 1 LP:ON
SW 2 LP:ON
DET
REC Ⓗ : OFF
1/2VCC
GND
LINE
C4010 50V1
C4013 150P
C4017 50V1
R4014 33K
VR4001 50KB
C4019 50V1
C4032 1200P
R4008 33K
R4013 2700
C4015 0.033
R4006 22K
R4007 15K
AUDIO P.B.LEVEL
R4015 1M
C4018 6V22
R4012 180K
VR4002 100KB
AUDIO BIAS CURR
R4009 10
C4014 10V33
TP4002
TP4003
R4010 150
C4011 390P
P4002 (TO A/C HEAD)
1 CTL GND
2 CTL
3 GND
4 AE HEAD GND
5 AE HEAD
6 A.HEAD(P)
7 A.HEAD(R)
8
9
T4001 EI07QF016Q
C4028 6800P
C4031 470P
R4026 22K
C4027 10V33
C4026 0.015
C4025 4700P
NOTE

3-24. AUDIO SCHEMATIC DIAGRAM

SUB VIDEO CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 3500 Series)



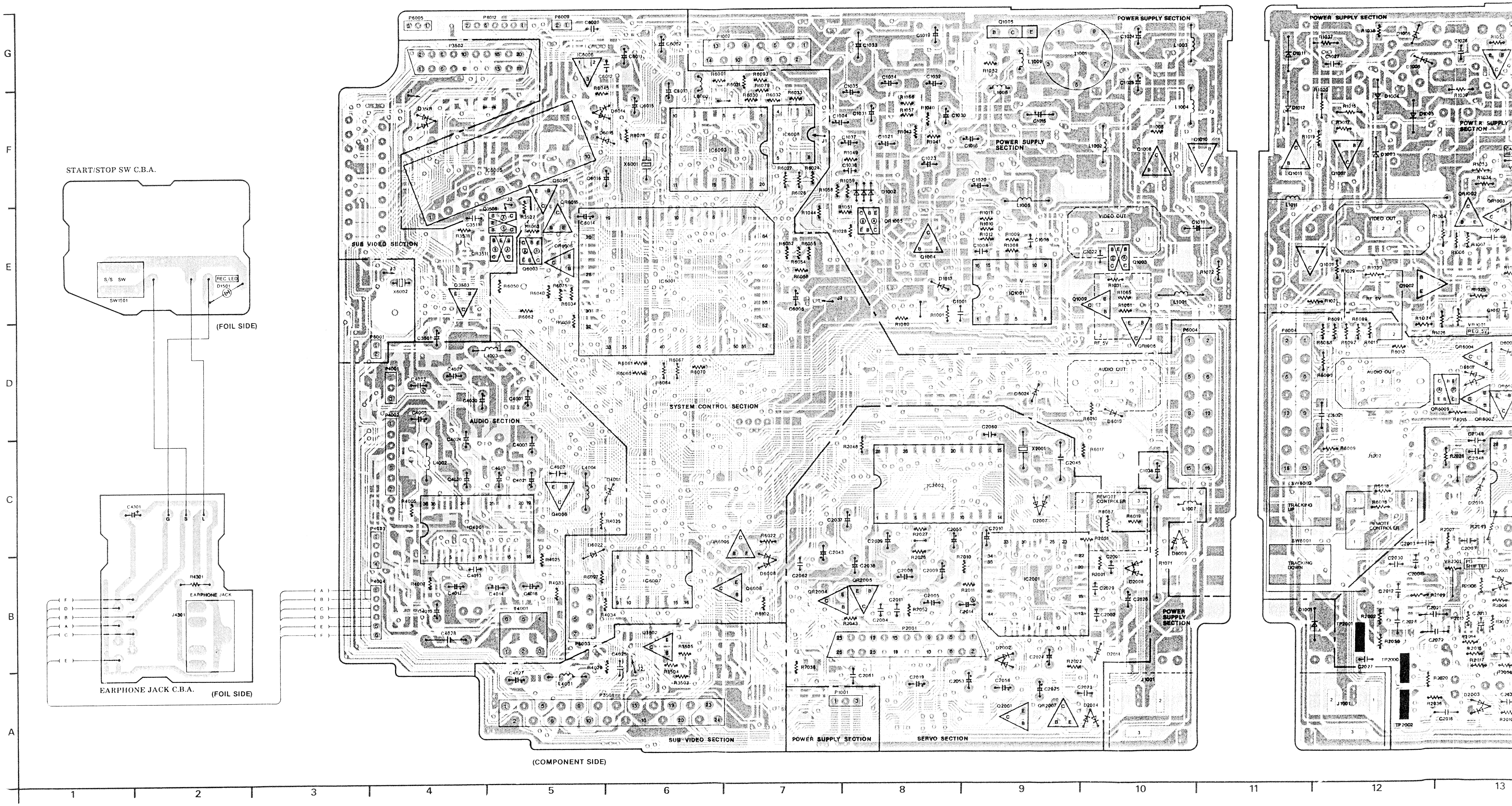
TP3501 PLAY
0.1V/10msec. div. 0.25Vp-p

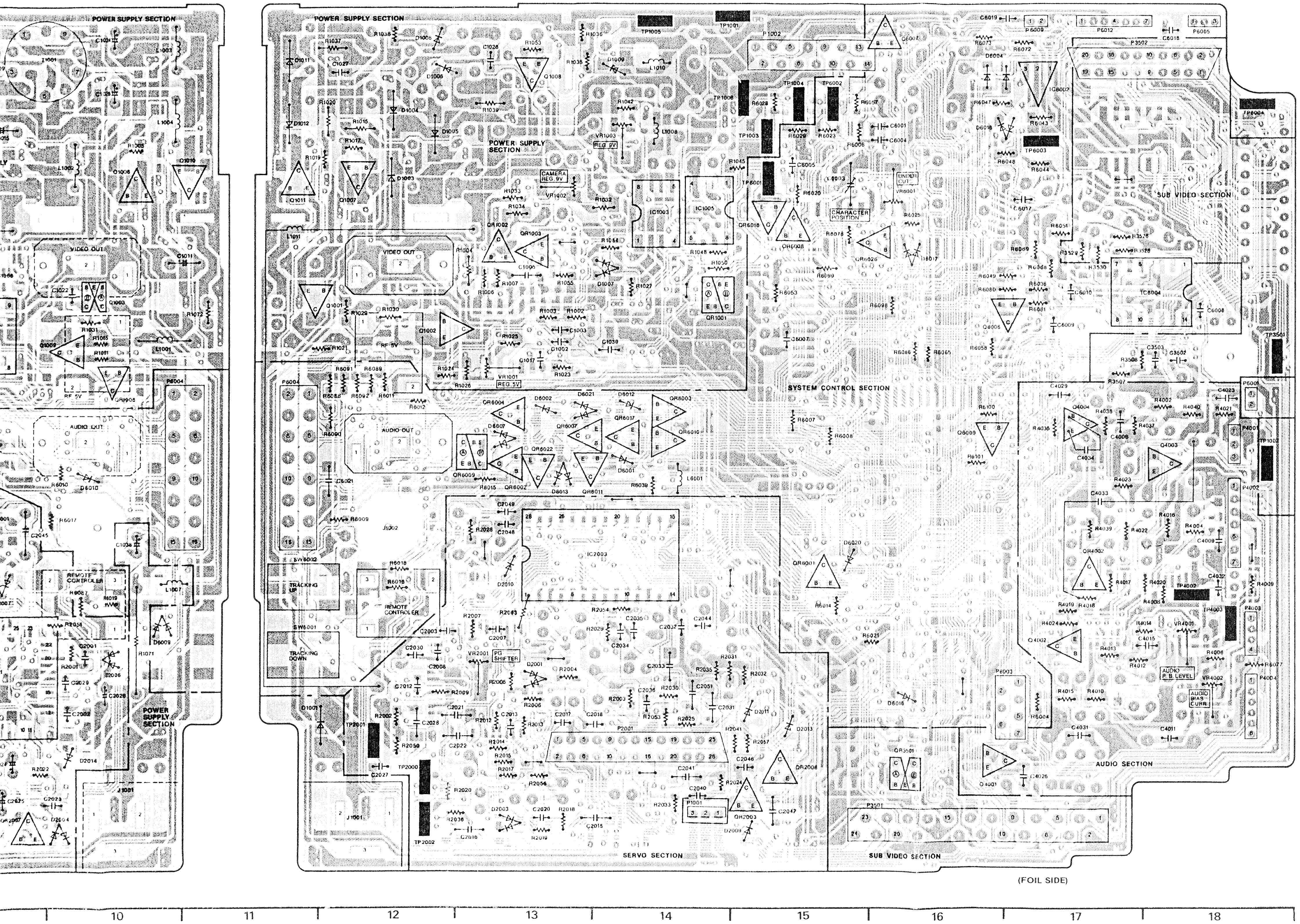

E
D
C
B
A
1
2
3
4
5
6
7
8
J4002 AUDIO JACK
GND
AUDIO OUT
L4003 15mH
R4002 560
R4040 1200
C4007 6V22
C4006 6800P
L4002 8.2mH
C4009 0.015
R4004 180
R4005 1800
START/STOP SW1501
SW C.B.A. EVQQSU04W
D1501 BR2202S20BI
EARPHONE JACK C.B.A.
AD BATTERY
R4301 82
C4301 10V47
J4301 EARPHONE JACK
1/2VCC
SW.A
SW.B
EE/P.B SW
P.B
REF
REC
EE(H):ON
SW 1 LP:ON
REC(H):OFF
EQ
MUTE
REC(H)
P.B(L)
SP(L)
LP(H)
VHS(H)
S.VHS(L)
MUTE(H)
EE(H)
P.B(L)
MIC(H)
LINE(L)
CAMERA(H)
LINE(L)
AUTO LEVEL
FADE
DET
SW 2 LP:ON
MIC
LINE
LINE IN
GND
MIC +B
VCC 1/2VCC
IC4001
μPC2309GS
C4005 6V47
C4003 6V100
C4002 0.01
C4001 16V100
C4030 16V47
L4004 100μH
R4035 33K
D4001 MA141.K
R4038 4700
Q4004 2SD1819 (AMP)
C4034 6800P
R4037 68K
R4036 820
TO SUB VIDEO
TO POWER
REG 9V
REG 5V
GND
TO SYSCON
A.D.REC(L)
EE(H)
A.MUTE(H)
FADE(L)
S-PHOTO
S.TAB 8.6V
S/S SW
AD BATTERY ⊖
AD BATTERY ⊕
GRIP REC LED
P4004 (TO EARPHONE JACK)
1 AD BATTERY ⊖
2 S/S SW
3 AD BATTERY ⊕
4 EARPHONE OUT
5 GND
6 GRIP REC LED
C4029 0.068
P4001 (TO MIC)
1 MIC GND
2 MIC
3 MIC +B
P4003 (TO FULL ERASE HEAD)
1 FE HEAD GND
2 FE HEAD
3 S-PHOTO
4 REG 5V
TO SERVO
FE(H)
CTL GND
CTL
C4010 50V1
R4006 22K
R4007 15K
C4032 1200P
R4008 33K
C4013 150P
C4015 0.033
C4017 50V1
R4014 33K
R4013 2700
VR4001 50KB
AUDIO P.B.LEVEL
R4012 180K
VR4002 100KB
AUDIO BIAS CURR
C4011 390P
R4009 10
TP4002
TP4003
C4014 10V33
R4010 150
R4015 1M
C4018 6V22
C4019 50V1
R4017 15K
R4018 12K
C4033 150P
R4019 680
C4022 50V1
C4021 25V3.3
R4020 100
R4021 100
C4023 0.01
C4020 25V4.7
Q4003 2SD1328 (MUTE)
R4022 47K
R4023 220K
R4016 100K
C4024 4V100μ
R4039 56K
QR4002 UN5212 (FADE ON:OFF)
Q4006 2SB1218 (FADE (L):ON)
Q4002 2SB1219 (A.D REC (L):ON)
R4024 2700
R4025 2700
L4001 100μ
P4002 (TO A/C HEAD)
1 CTL GND
2 CTL
3 GND
4 AE HEAD GND
5 AE HEAD
6 A.HEAD(P)
7 A.HEAD(R)
8
9
T4001 EIQ7QF016Q
C4028 6800P
C4031 4700P
R4026 22K
C4027 10V33
C4026 0.015
C4025 4700P
Q4001 2SD1820R (OSC)
R4033 33K
R4034 47K

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-25. MAIN C.B.A. [POWER SUPPLY, SERVO, SUB VIDEO, AUDIO, SYSTEM CONTROL Section]


START/STOP SW C.B.A.
S/S SW
SW1501
REC LED
D1501
(FOIL SIDE)
EARPHONE JACK
J4301
R4301
C4301
EARPHONE JACK C.B.A.
(FOIL SIDE)
SUB VIDEO SECTION
AUDIO SECTION
SYSTEM CONTROL SECTION
POWER SUPPLY SECTION
SERVO SECTION
VIDEO OUT
AUDIO OUT
REMOTE CONTROLLER
TRACKING UP
TRACKING DOWN
PG SHIFTER
IC6001
IC6002
IC6003
IC6005
IC6007
IC2001
IC2002
IC1001
IC4001
T1001
X6001
X6002
X2001
(COMPONENT SIDE)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13


POWER SUPPLY SECTION
SYSTEM CONTROL SECTION
SUB VIDEO SECTION
AUDIO SECTION
SERVO SECTION
VIDEO OUT
AUDIO OUT
REMOTE CONTROLLER
TRACKING UP
TRACKING DOWN
CAMERA REG. 9V
REG. 9V
REG. 5V
CHARACTER POSITION
PG SHIFTER
AUDIO P.B. LEVEL
AUDIO BIAS CURR.
10
11
12
13
14
15
16
17
18

(FOIL SIDE)

SYSTEM CONTROL Section	
Transistor	
Q6003	E-5 Ⓒ
Q6005	F-5 Ⓒ
Q6006	E-16 Ⓕ
Q6007	G-16 Ⓕ
Q6008	B-7 Ⓒ
Q6009	D-16 Ⓕ
Transistor & Resistor	
QR6001	C-15 Ⓕ
QR6002	D-13 Ⓕ
QR6003	D-14 Ⓕ
QR6004	D-13 Ⓕ
QR6005	E-5 Ⓒ
QR6006	C-7 Ⓒ
QR6007	D-13 Ⓕ
QR6008	E-15 Ⓕ
QR6010	D-14 Ⓕ
QR6011	D-13 Ⓕ
QR6015	F-5 Ⓒ
QR6016	F-15 Ⓕ
QR6017	D-14 Ⓕ
QR6022	D-13 Ⓕ
QR6026	E-15 Ⓕ
Integrated Circuit	
IC6001	E-6 Ⓒ
IC6002	G-17 Ⓕ
IC6003	F-6 Ⓒ
IC6004	E-18 Ⓕ
IC6005	F-5 Ⓒ
IC6006	G-5 Ⓒ
IC6007	B-6 Ⓒ
IC6008	F-7 Ⓒ
Test Point	
TP6001	F-15 Ⓕ
TP6002	G-15 Ⓕ
TP6003	F-17 Ⓕ
TP6004	F-18 Ⓕ
Adjustment	
C6003	F-15 Ⓕ
VR6001	F-16 Ⓕ
Connector	
P6001	D-18 Ⓕ
P6001	D-4 Ⓒ
P6003	B-17 Ⓕ
P6003	B-5 Ⓒ
P6004	D-10 Ⓒ
P6004	D-11 Ⓕ
P6005	G-18 Ⓕ
P6005	G-4 Ⓒ
P6009	G-17 Ⓕ
P6009	G-5 Ⓒ
P6012	G-17 Ⓕ
P6012	G-5 Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

POWER SUPPLY Section	
Transistor	
Q1001	E-12 Ⓕ
Q1002	E-12 Ⓕ
Q1003	E-10 Ⓒ
Q1004	E-8 Ⓒ
Q1005	G-9 Ⓒ
Q1006	F-10 Ⓒ
Q1007	F-12 Ⓕ
Q1008	G-13 Ⓕ
Q1009	E-10 Ⓒ
Q1010	F-11 Ⓒ
Q1011	F-11 Ⓕ
Transistor & Resistor	
QR1001	E-14 Ⓕ
QR1002	E-13 Ⓕ
QR1003	E-13 Ⓕ
QR1005	E-8 Ⓒ
QR1006	D-10 Ⓒ
QR1009	D-13 Ⓕ
Integrated Circuit	
IC1001	E-9 Ⓒ
IC1003	F-14 Ⓕ
IC1005	F-14 Ⓕ
Test Point	
TP1001	G-14 Ⓕ
TP1002	D-18 Ⓕ
TP1003	F-15 Ⓕ
TP1004	G-15 Ⓕ
TP1005	G-14 Ⓕ
TP1006	F-14 Ⓕ
Adjustment	
VR1001	D-13 Ⓕ
VR1002	F-13 Ⓕ
VR1003	F-14 Ⓕ
Connector	
P1001	A-14 Ⓕ
P1001	A-8 Ⓒ
P1002	G-15 Ⓕ
P1002	G-6 Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

SERVO Section	
Transistor	
Q2001	A-9 Ⓒ
Transistor & Resistor	
QR2003	A-15 Ⓕ
QR2004	B-7 Ⓒ
QR2005	B-8 Ⓒ
QR2006	B-15 Ⓕ
QR2007	A-9 Ⓒ
Integrated Circuit	
IC2001	B-9 Ⓒ
IC2002	C-8 Ⓒ
IC2003	C-14 Ⓕ
Test Point	
TP2000	B-12 Ⓕ
TP2001	B-12 Ⓕ
TP2002	A-12 Ⓕ
Adjustment	
VR2001	B-13 Ⓕ
Connector	
P2001	B-14 Ⓕ
P2001	B-8 Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

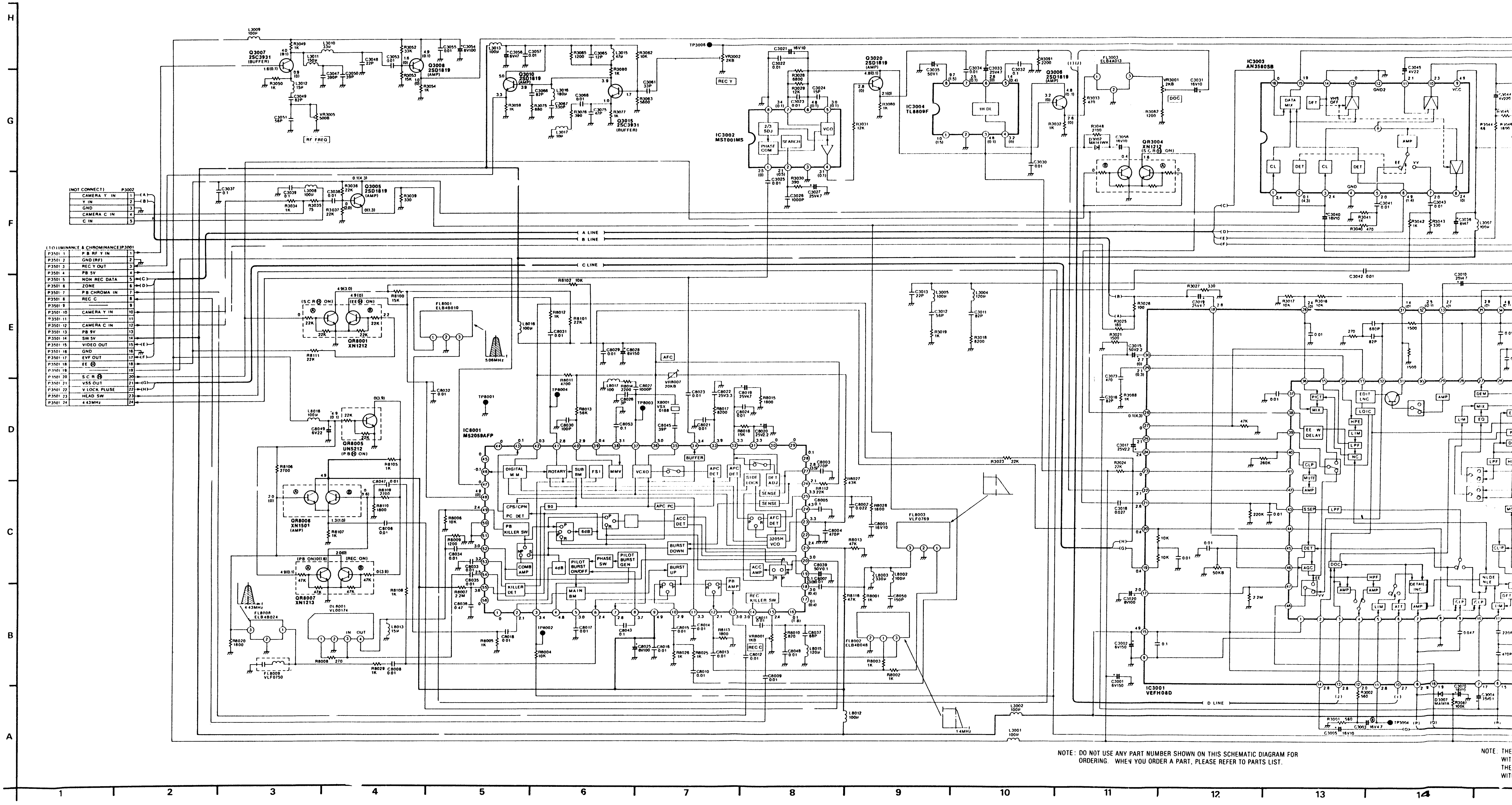
SUB VIDEO Section	
Transistor	
Q3502	B-6 Ⓒ
Q3503	E-4 Ⓒ
Q3508	E-5 Ⓒ
Transistor & Resistor	
QR3501	B-16 Ⓕ
QR3511	E-5 Ⓒ
Test Point	
TP3501	E-18 Ⓕ
Connector	
P3501	A-16 Ⓕ
P3501	A-6 Ⓒ
P3502	G-17 Ⓕ
P3502	G-4 Ⓒ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

AUDIO Section	
Transistor	
Q4001	A-16 Ⓕ
Q4002	B-17 Ⓕ
Q4003	D-18 Ⓕ
Q4004	D-17 Ⓕ
Q4006	C-5 Ⓒ
Transistor & Resistor	
QR4002	C-17 Ⓕ
Integrated Circuit	
IC4001	C-4 Ⓒ
Test Point	
TP4002	C-18 Ⓕ
TP4003	C-18 Ⓕ
Adjustment	
VR4001	C-18 Ⓕ
VR4002	B-18 Ⓕ
Connector	
P4001	D-18 Ⓕ
P4001	D-4 Ⓒ
P4002	D-18 Ⓕ
P4002	D-4 Ⓒ
P4003	C-18 Ⓕ
P4003	C-4 Ⓒ
P4004	B-18 Ⓕ
P4004	B-4 Ⓒ
J4301	B-2

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

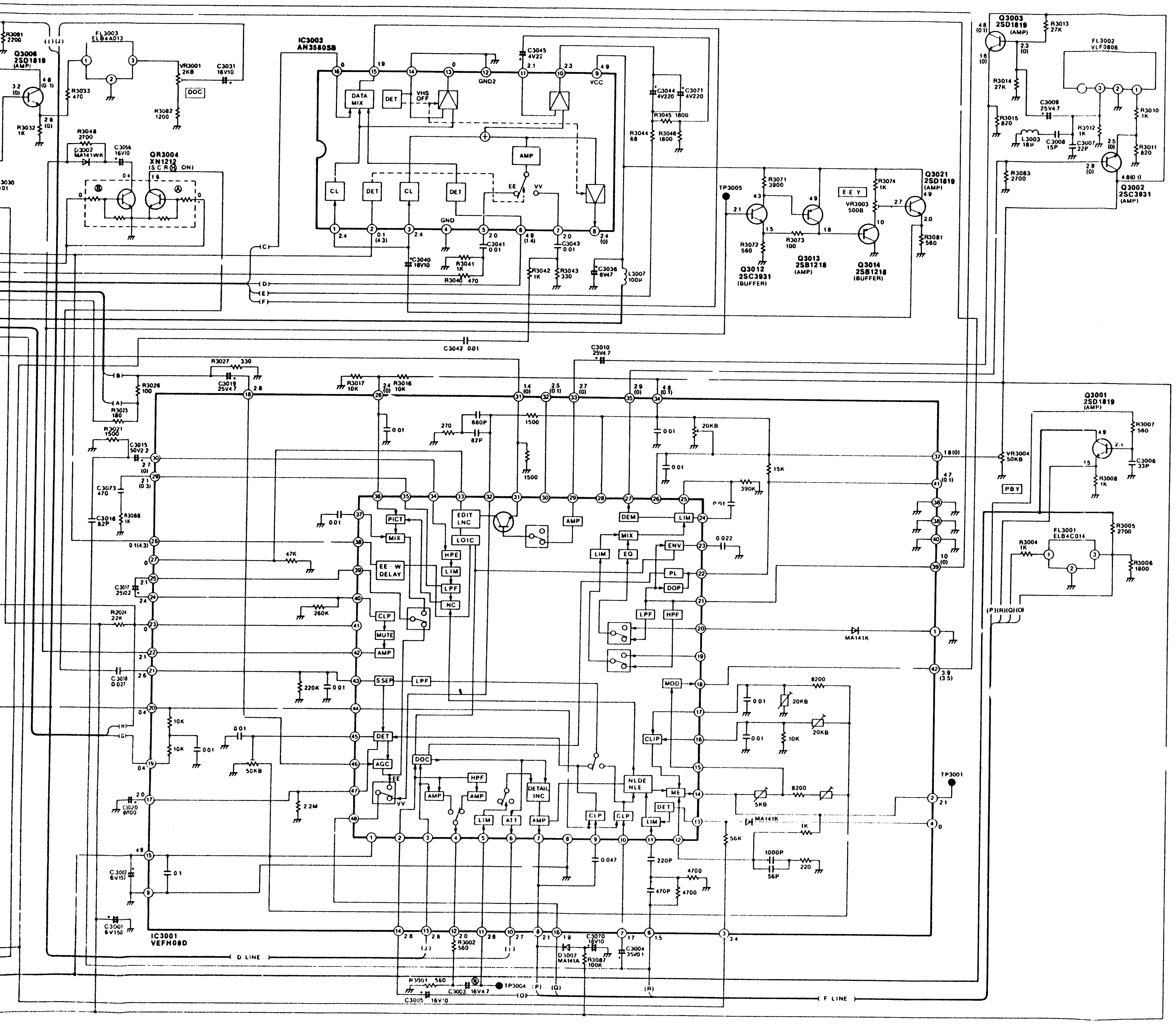
3-26. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM


(NOT CONNECT) P3002
CAMERA Y IN 1 (A)
Y IN 2 (B)
GND 3
CAMERA C IN 4
C IN 5
(TO LUMINANCE & CHROMINANCE)P3001
P3501·1 P B RF Y IN 1
P3501·2 GND (RF) 2
P3501·3 REC Y OUT 3
P3501·4 PB 5V 4
P3501·5 NON REC DATA 5 (C)
P3501·6 ZONE 6 (D)
P3501·7 P B CHROMA IN 7
P3501·8 REC C 8
P3501·9 9
P3501·10 CAMERA Y IN 10
P3501·11 11
P3501·12 CAMERA C IN 12
P3501·13 PB 9V 13
P3501·14 SW 5V 14
P3501·15 VIDEO OUT 15 (E)
P3501·16 GND 16
P3501·17 EVF OUT 17 (F)
P3501·18 EE Ⓗ 18
P3501·19 19
P3501·20 S C R Ⓗ 20
P3501·21 VSS OUT 21 (G)
P3501·22 V LOCK PLUSE 22 (H)
P3501·23 HEAD SW 23
P3501·24 4.43MHz 24
Q3007 2SC3931 (BUFFER)
Q3008 2SD1819 (AMP)
Q3010 2SD1819 (AMP)
Q3015 2SC3931 (BUFFER)
Q3005 2SD1819 (AMP)
Q3020 2SD1819 (AMP)
Q3006 2SD1819 (AMP)
QR3004 XN1212
IC3002 MST001MS
IC3004 TL8809F
IC3003 AN3580SB
FL3003 ELB4A013
RF FREQ
REC Y
DOC
A LINE
B LINE
C LINE
D LINE
QR8001 XN1212
QR8005 UN5212
QR8006 XN1501 (AMP)
QR8007 XN1213
FL8001 ELB4B010
FL8008 ELB4B024
FL8009 VLF0750
DL8001 VL00174
IC8001 M52059AFP
FL8003 VLF0769
FL8002 ELB4B048
IC3001 VEFH08D
TP3006
TP8001
TP8002
TP8003
TP8004
TP3004
5.06MHz
4.43MHz
14MHz
AFC
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
14

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE
WIT
THE
WIT

Back Page:
MAIN C.B.A. Section

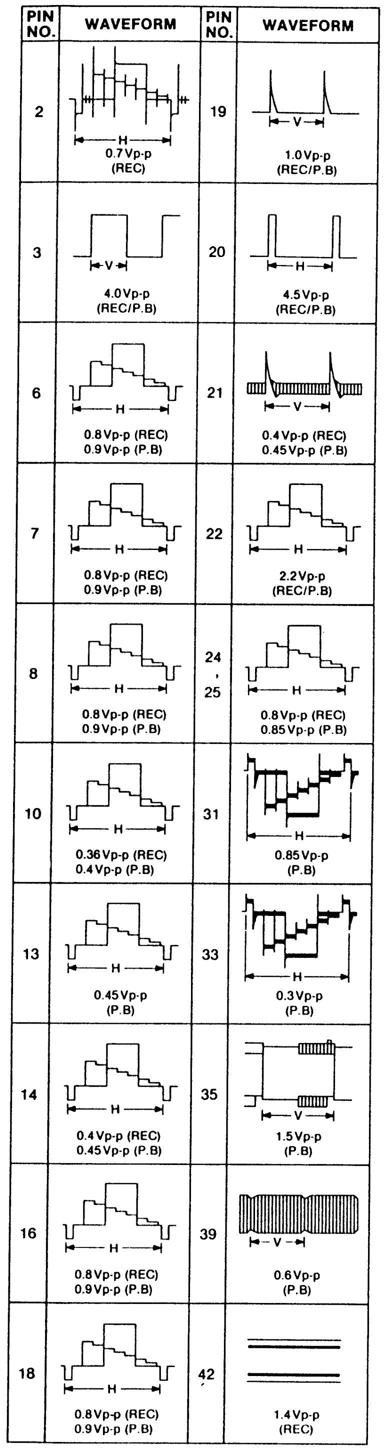

IC3003
AN3580SB
IC3001
VEFH08D
Q3006
2SD1819
(AMP)
QR3004
XN1212
Q3003
2SD1819
(AMP)
Q3021
2SD1819
(AMP)
Q3002
2SC3931
(AMP)
Q3012
2SC3931
(BUFFER)
Q3013
2SB1218
(AMP)
Q3014
2SB1218
(BUFFER)
Q3001
2SD1819
(AMP)
FL3001
ELB4C014
FL3002
VLF0806
FL3003
ELB4A013
TP3001
TP3004
TP3005
D LINE
F LINE

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

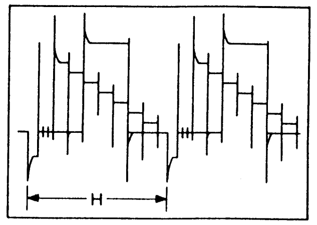
11
12
13
14
15
16
17
18

IC3001 (VEFH08D)

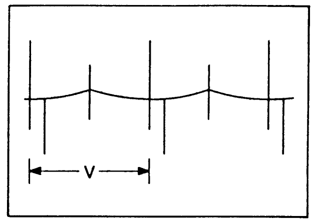


PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
2	H 0.7Vp-p (REC)	19	V 1.0Vp-p (REC/P.B)
3	V 4.0Vp-p (REC/P.B)	20	H 4.5Vp-p (REC/P.B)
6	H 0.8Vp-p (REC) 0.9Vp-p (P.B)	21	V 0.4Vp-p (REC) 0.45Vp-p (P.B)
7	H 0.8Vp-p (REC) 0.9Vp-p (P.B)	22	H 2.2Vp-p (REC/P.B)
8	H 0.8Vp-p (REC) 0.9Vp-p (P.B)	24 , 25	H 0.8Vp-p (REC) 0.85Vp-p (P.B)
10	H 0.36Vp-p (REC) 0.4Vp-p (P.B)	31	H 0.85Vp-p (P.B)
13	H 0.45Vp-p (P.B)	33	H 0.3Vp-p (P.B)
14	H 0.4Vp-p (REC) 0.45Vp-p (P.B)	35	V 1.5Vp-p (P.B)
16	H 0.8Vp-p (REC) 0.9Vp-p (P.B)	39	V 0.6Vp-p (P.B)
18	H 0.8Vp-p (REC) 0.9Vp-p (P.B)	42	1.4Vp-p (REC)

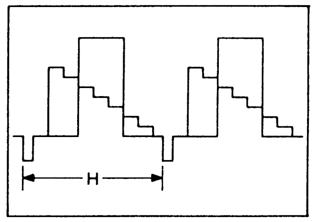
LUMINANCE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 3000 Series)



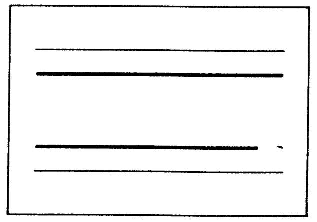
TP3001 REC
0.2V/20μsec. div. 0.7Vp-p



TP3004 PLAY
0.2V/10msec. div. 0.6Vp-p

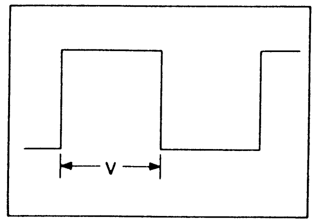


TP3005 REC/PLAY
0.5V/20μsec. div. 1.2Vp-p

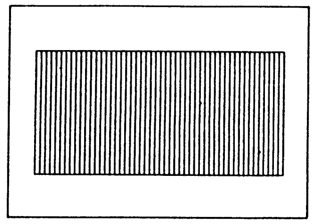


TP3006 REC
0.5V/20μsec. div. 1.4Vp-p

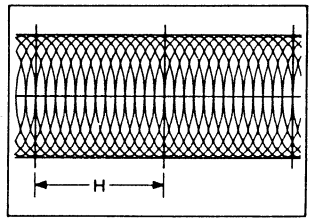
CHROMINANCE CIRCUIT TP (Test Point) WAVEFORM (REF. NO. 8000 Series)



TP8002 REC/PLAY
0.2V/10msec. div. 0.4Vp-p

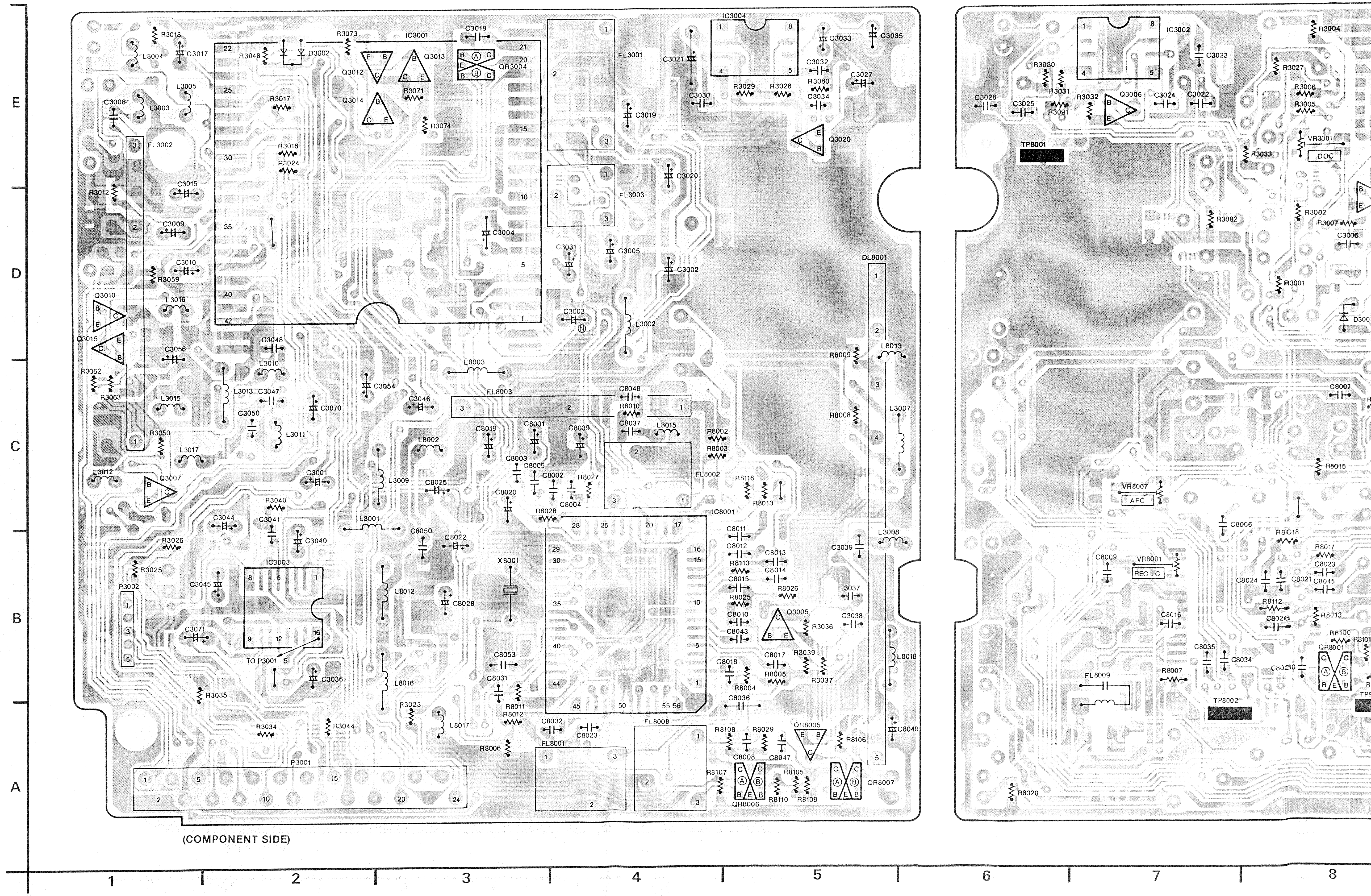


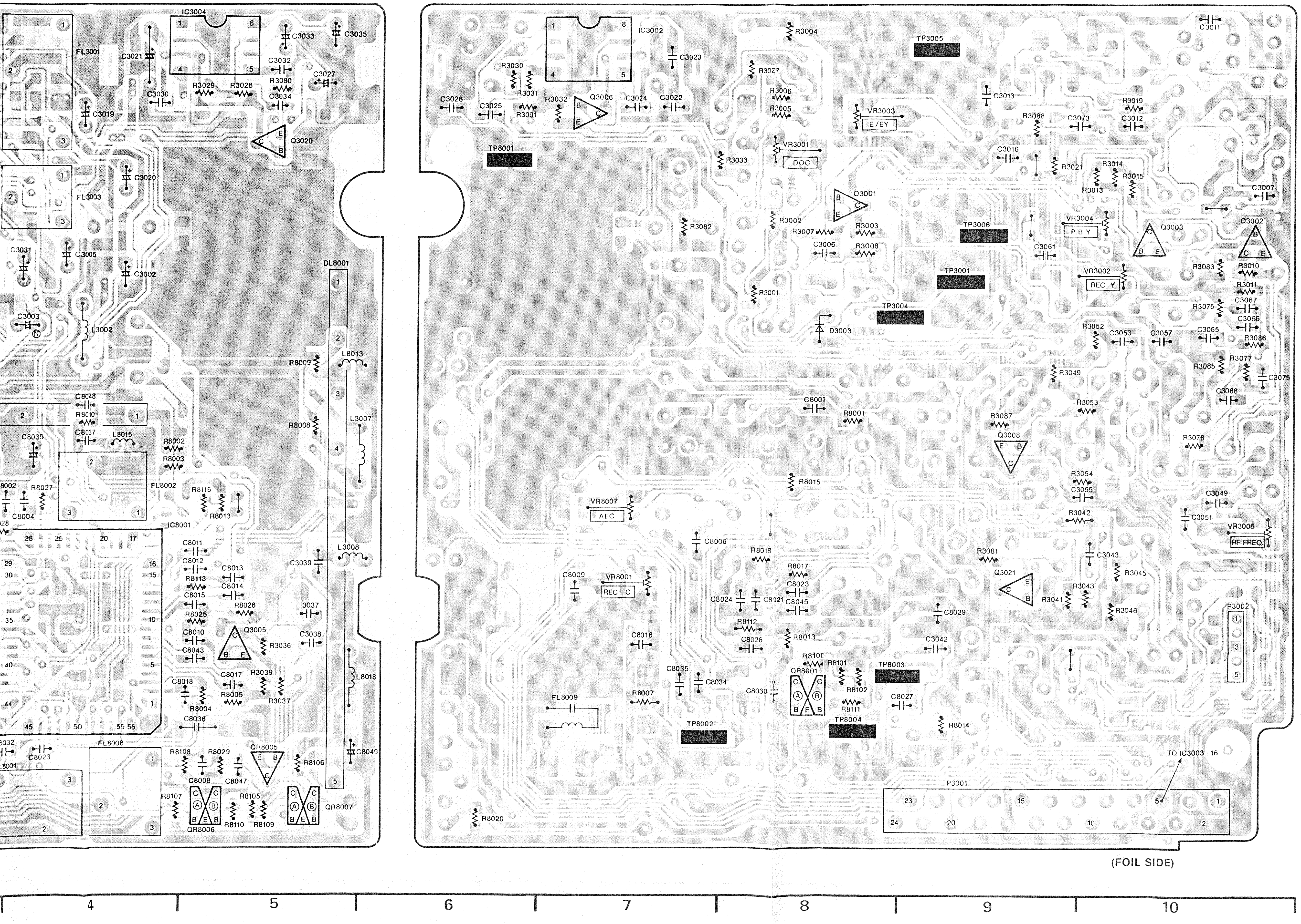
TP8003 0.2V/20μsec. div.
REC: 0.51Vp-p
PLAY: 0.62Vp-p



TP8004 REC/PLAY
0.5V/20μsec. div. 1.1Vp-p

3-27. LUMINANCE & CHROMINANCE PACK C.B.A.


(COMPONENT SIDE)
E
D
C
B
A
1
2
3
4
5
6
7
8
R3018
L3004
C3017
L3005
C3008
L3003
FL3002
C3015
R3012
C3009
C3010
R3059
Q3010
L3016
Q3015
C3056
R3062
R3063
L3015
R3050
L3017
L3012
Q3007
R3026
R3025
P3002
C3045
C3071
R3035
R3034
R3044
P3001
IC3001
R3048
D3002
R3073
Q3012
Q3013
C3018
QR3004
Q3014
R3017
R3071
R3074
R3016
R3024
C3004
C3048
L3010
L3013
C3047
C3050
C3070
L3011
C3054
C3046
C3001
R3040
C3044
C3041
C3040
IC3003
TO P3001 -5
C3036
L8003
FL8003
L8002
L3009
C8025
L3001
C8050
C8022
L8012
C8028
X8001
L8016
R3023
L8017
R8006
C8053
C8031
R8011
R8012
C8032
C8023
FL8001
FL3001
FL3003
C3031
C3005
C3003
L3002
C3021
C3019
C3020
C3002
C8019
C8001
C8039
C8003
C8005
C8002
R8027
C8020
C8004
R8028
C8048
R8010
C8037
L8015
FL8002
IC8001
IC3004
C3030
R3029
R3028
R3080
C3034
C3032
C3033
C3035
C3027
Q3020
DL8001
R8009
L8013
R8008
L3007
R8002
R8003
R8116
R8013
C8011
C8012
C8013
R8113
C8014
C8015
R8025
R8026
C8010
C8043
Q3005
R3036
C8017
R3039
C8018
R8005
R3037
R8004
C8036
C3039
L3008
3037
C3038
L8018
FL8008
R8108
R8029
QR8005
R8106
C8049
C8008
C8047
R8107
R8105
QR8006
R8110
R8109
QR8007
IC3002
C3023
R3004
R3030
R3031
R3027
C3026
C3025
R3091
R3032
Q3006
C3024
C3022
R3006
R3005
TP8001
VR3001
DOC
R3033
R3082
R3002
R3007
C3006
R3001
D3001
C8007
R8015
VR8007
AFC
C8006
R8018
R8017
C8009
VR8001
REC. C
C8023
C8024
C8021
C8045
R8112
C8026
R8013
C8016
R8100
R8101
QR8001
C8035
C8034
C8030
FL8009
R8007
TP8002
R8020


IC3004
FL3001
C3021
C3033
C3035
C3032
C3029
R3028
R3080
C3027
C3034
C3030
C3019
Q3020
C3020
FL3003
C3031
C3005
C3002
C3003
L3002
DL8001
L8013
R8009
C8048
R8010
C8037
L8015
C8039
R8008
L3007
R8002
R8003
R8027
C8004
FL8002
R8116
R8013
IC8001
C8011
C8012
R8113
C8013
C8014
C8015
R8025
C3039
L3008
R8026
3037
C8010
Q3005
R3036
C3038
C8043
C8018
C8017
R3039
R8005
R3037
R8004
L8018
C8036
C8023
FL8008
C8040
R8108
R8029
QR8005
R8106
C8008
C8047
R8107
R8105
QR8007
QR8006
R8110
R8109
IC3002
C3023
R3004
TP3005
C3011
R3030
R3031
R3027
C3026
C3025
R3091
R3032
Q3006
C3024
C3022
R3006
R3005
VR3003
E/EY
C3013
R3019
R3088
C3073
C3012
TP8001
R3033
VR3001
DOC
C3016
R3021
R3014
R3015
R3013
C3007
Q3001
R3082
R3002
R3007
R3003
C3006
R3008
TP3006
VR3004
P.B Y
Q3003
Q3002
C3061
TP3001
VR3002
REC . Y
R3083
R3010
R3011
R3001
TP3004
R3075
C3067
C3066
D3003
R3052
C3053
C3057
C3065
R3086
R3077
R3085
R3049
C3075
C3068
C8007
R8001
R3053
R3087
Q3008
R3076
R8015
R3054
C3055
VR8007
AFC
C3049
R3042
C3051
VR3005
RF FREQ.
C8006
R8018
R3081
C3043
R8017
C8009
VR8001
REC . C
C8023
Q3021
R3045
C8024
C8021
C8045
R3043
R3041
C3029
R3046
P3002
R8112
C8026
R8013
C3042
C8016
R8100
R8101
QR8001
TP8003
C8035
C8034
C8030
R8102
C8027
FL8009
R8007
R8111
TP8004
R8014
TP8002
TO IC3003 - 16
P3001
R8020
4
5
6
7
8
9
10

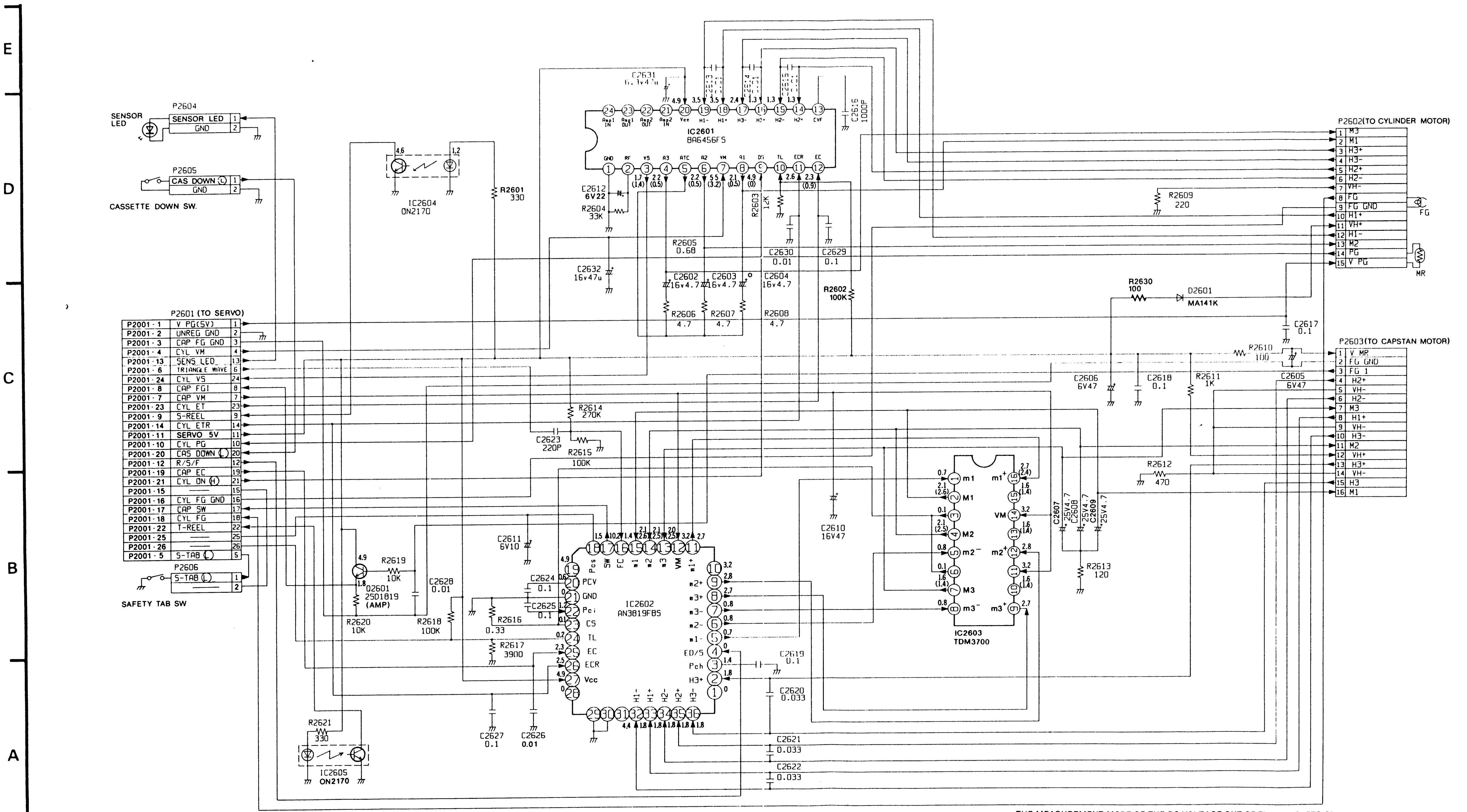
(FOIL SIDE)

LUMINANCE & CHROMINANCE PACK C.B.A.	
Transistor	
Q3001	D-8 Ⓕ
Q3002	D-10 Ⓕ
Q3003	D-10 Ⓕ
Q3005	B-5 Ⓒ
Q3006	E-7 Ⓕ
Q3007	C-1 Ⓒ
Q3008	C-9 Ⓕ
Q3010	D-1 Ⓒ
Q3012	E-2 Ⓒ
Q3013	E-3 Ⓒ
Q3014	E-2 Ⓒ
Q3015	D-1 Ⓒ
Q3020	E-5 Ⓒ
Q3021	B-9 Ⓕ
Transistor & Resistor	
QR3004	E-3 Ⓒ
QR8001	B-8 Ⓕ
QR8005	A-5 Ⓒ
QR8006	A-5 Ⓒ
QR8007	A-5 Ⓒ
Integrated Circuit	
IC3001	E-3 Ⓒ
IC3002	E-7 Ⓕ
IC3003	B-2 Ⓒ
IC3004	E-5 Ⓒ
Test Point	
TP3001	D-9 Ⓕ
TP3004	D-8 Ⓕ
TP3005	E-9 Ⓕ
TP3006	D-9 Ⓕ
TP8001	E-6 Ⓕ
TP8002	A-7 Ⓕ
TP8003	B-8 Ⓕ
TP8004	A-8 Ⓕ
Adjustment	
VR3001	E-8 Ⓕ
VR3002	D-10 Ⓕ
VR3003	E-8 Ⓕ
VR3004	D-10 Ⓕ
VR3005	C-10 Ⓕ
VR8001	B-7 Ⓕ
VR8007	C-7 Ⓕ
Connector	
P3001	A-2 Ⓒ
P3001	A-9 Ⓕ
P3002	B-1 Ⓒ
P3002	B-10 Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

Next Page:
MOTOR DRIVE Section

3-28. MOTOR DRIVE SCHEMATIC DIAGRAM

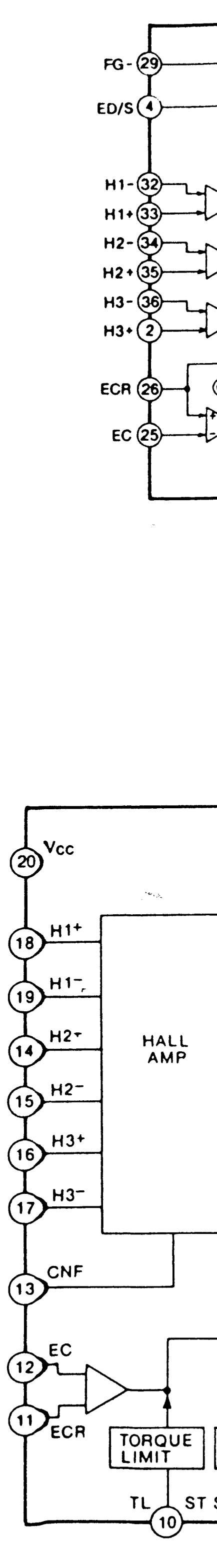

E
D
C
B
A
SENSOR LED
P2604
SENSOR LED
GND
P2605
CAS DOWN ⓛ
GND
CASSETTE DOWN SW.
IC2604
ON2170
R2601
330
P2601 (TO SERVO)
P2001·1 V PG(5V) 1
P2001·2 UNREG GND 2
P2001·3 CAP FG GND 3
P2001·4 CYL VM 4
P2001·13 SENS LED 13
P2001·6 TRIANGLE WAVE 6
P2001·24 CYL VS 24
P2001·8 CAP FGI 8
P2001·7 CAP VM 7
P2001·23 CYL ET 23
P2001·9 S-REEL 9
P2001·14 CYL ETR 14
P2001·11 SERVO 5V 11
P2001·10 CYL PG 10
P2001·20 CAS DOWN ⓛ 20
P2001·12 R/S/F 12
P2001·19 CAP EC 19
P2001·21 CYL ON Ⓗ 21
P2001·15 — 15
P2001·16 CYL FG GND 16
P2001·17 CAP SW 17
P2001·18 CYL FG 18
P2001·22 T-REEL 22
P2001·25 — 25
P2001·26 — 26
P2001·5 S-TAB ⓛ 5
P2606
S-TAB ⓛ
SAFETY TAB SW
R2619
10K
D2601
2SD1819
(AMP)
R2620
10K
R2618
100K
C2628
0.01
R2621
330
IC2605
ON2170
C2631
6.3V47u
IC2601
BA6456FS
C2616
1000P
C2612
6V22
R2604
33K
R2603
1.2K
C2632
16V47u
R2605
0.68
C2630
0.01
C2629
0.1
C2602
16V4.7
C2603
16V4.7
C2604
16V4.7
R2602
100K
R2606
4.7
R2607
4.7
R2608
4.7
R2609
220
P2602(TO CYLINDER MOTOR)
1 M3
2 M1
3 H3+
4 H3-
5 H2+
6 H2-
7 VH-
8 FG
9 FG GND
10 H1+
11 VH+
12 H1-
13 M2
14 PG
15 V PG
FG
MR
R2630
100
D2601
MA141K
C2617
0.1
R2610
100
P2603(TO CAPSTAN MOTOR)
1 V MR
2 FG GND
3 FG 1
4 H2+
5 VH-
6 H2-
7 M3
8 H1+
9 VH-
10 H3-
11 M2
12 VH+
13 H3+
14 VH-
15 H3
16 M1
C2606
6V47
C2618
0.1
R2611
1K
C2605
6V47
R2614
270K
C2623
220P
R2615
100K
C2611
6V10
C2624
0.1
C2625
0.1
R2616
0.33
R2617
3900
IC2602
AN3819FBS
C2627
0.1
C2626
0.01
C2619
0.1
C2620
0.033
C2621
0.033
C2622
0.033
C2610
16V47
IC2603
TDM3700
C2607
25V4.7
C2608
25V4.7
C2609
25V4.7
R2612
470
R2613
120
1
2
3
4
5
6
7
8

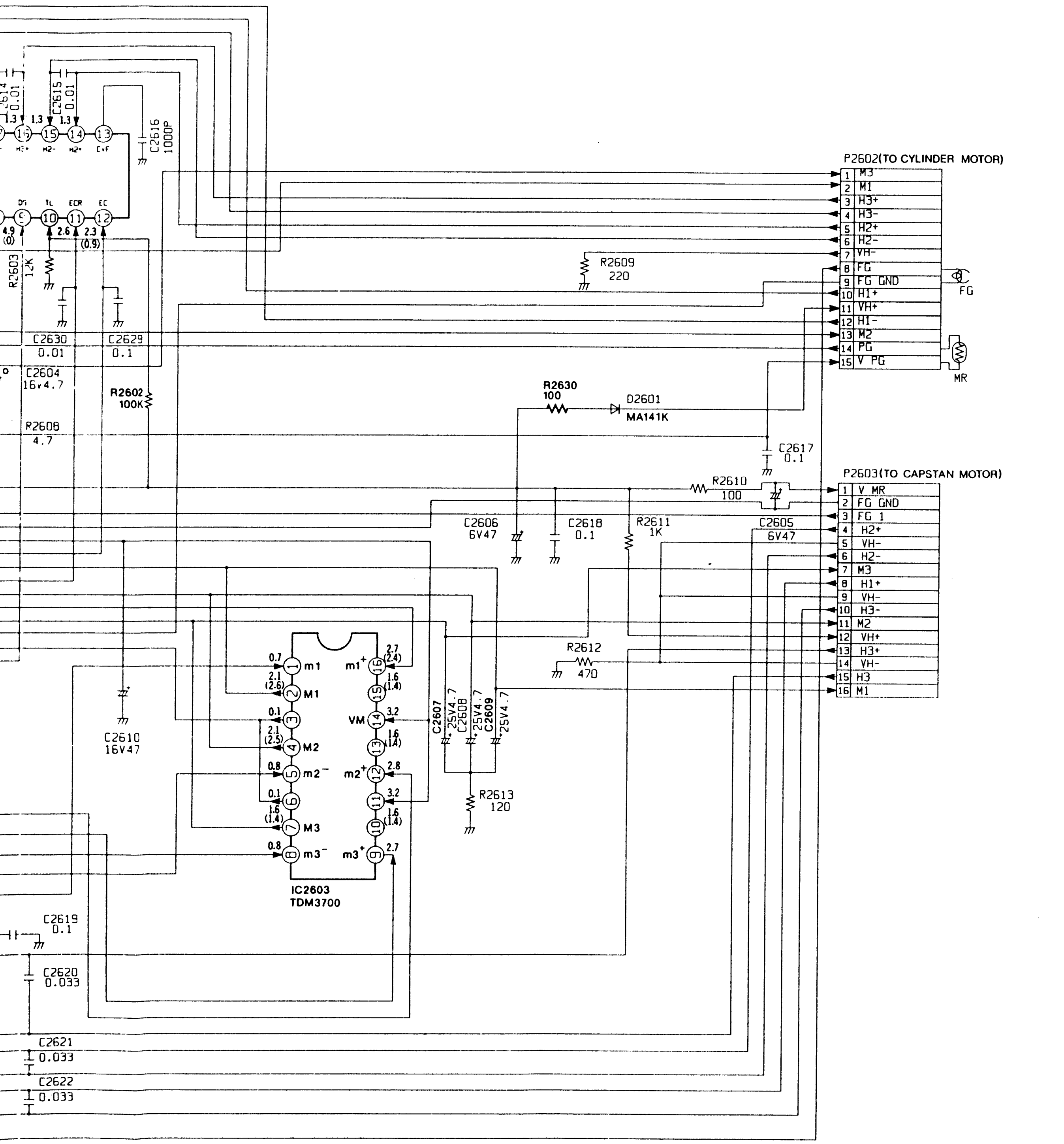
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

IC BLOCK


FG-
ED/S
H1-
H1+
H2-
H2+
H3-
H3+
ECR
EC
Vcc
H1+
H1-
H2+
H2-
H3+
H3-
HALL AMP
CNF
EC
ECR
TORQUE LIMIT
TL
ST


P2602(TO CYLINDER MOTOR)
1 M3
2 M1
3 H3+
4 H3-
5 H2+
6 H2-
7 VH-
8 FG
9 FG GND
10 H1+
11 VH+
12 H1-
13 M2
14 PG
15 V PG
FG
MR
C2616 1000P
C2615 0.01
R2603 12K
C2630 0.01
C2629 0.1
C2604 16V4.7
R2602 100K
R2606 4.7
R2609 220
R2630 100
D2601 MA141K
C2617 0.1
R2610 100
P2603(TO CAPSTAN MOTOR)
1 V MR
2 FG GND
3 FG 1
4 H2+
5 VH-
6 H2-
7 M3
8 H1+
9 VH-
10 H3-
11 M2
12 VH+
13 H3+
14 VH-
15 H3
16 M1
C2606 6V47
C2618 0.1
R2611 1K
C2605 6V47
R2612 470
C2610 16V47
C2607 25V4.7
C2608 25V4.7
C2609 25V4.7
R2613 120
IC2603 TDM3700
m1
M1
M2
m2⁻
M3
m3⁻
m1⁺
VM
m2⁺
m3⁺
C2619 0.1
C2620 0.033
C2621 0.033
C2622 0.033

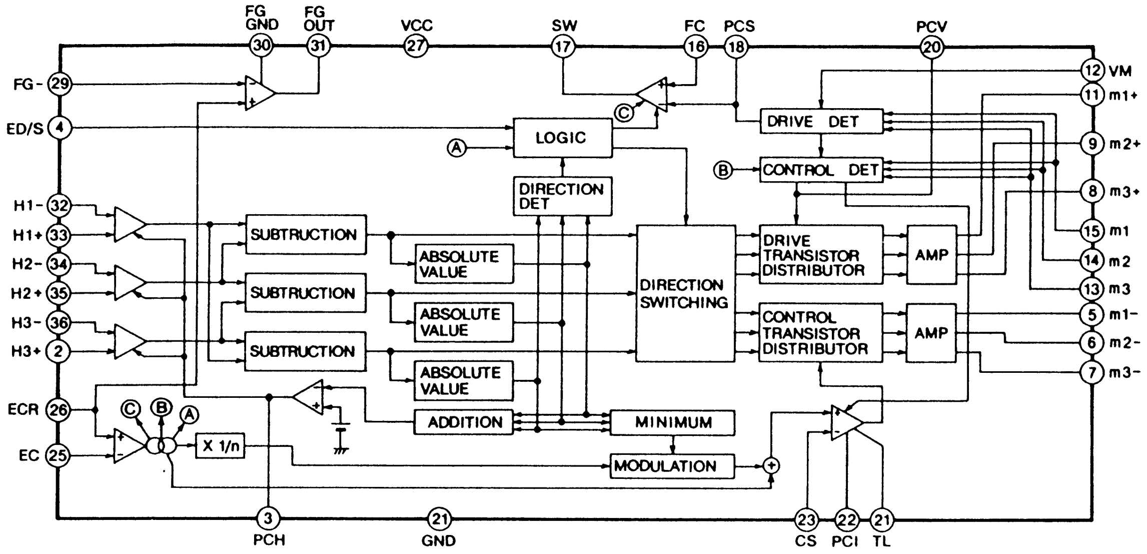
ACKETS ( ) ON THIS DIAGRAM IS RECORD MODE

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

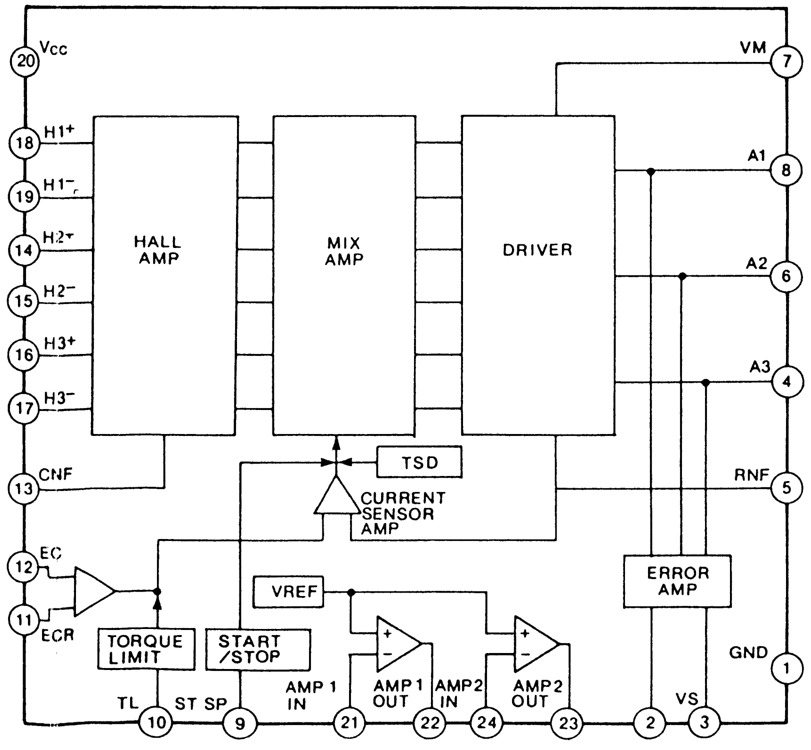
5 6 7 8

IC BLOCK

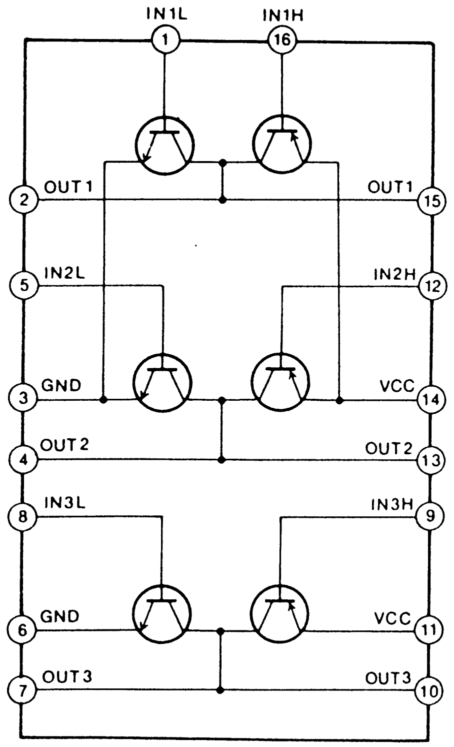
IC2602 (AN3819FBS)


FG GND 30
FG OUT 31
VCC 27
SW 17
FC 16
PCS 18
PCV 20
FG- 29
ED/S 4
H1- 32
H1+ 33
H2- 34
H2+ 35
H3- 36
H3+ 2
ECR 26
EC 25
LOGIC
DIRECTION DET
SUBTRUCTION
ABSOLUTE VALUE
ADDITION
DIRECTION SWITCHING
MINIMUM
MODULATION
X 1/n
DRIVE DET
CONTROL DET
DRIVE TRANSISTOR DISTRIBUTOR
CONTROL TRANSISTOR DISTRIBUTOR
AMP
12 VM
11 m1+
9 m2+
8 m3+
15 m1
14 m2
13 m3
5 m1-
6 m2-
7 m3-
3 PCH
21 GND
23 CS
22 PCI
21 TL

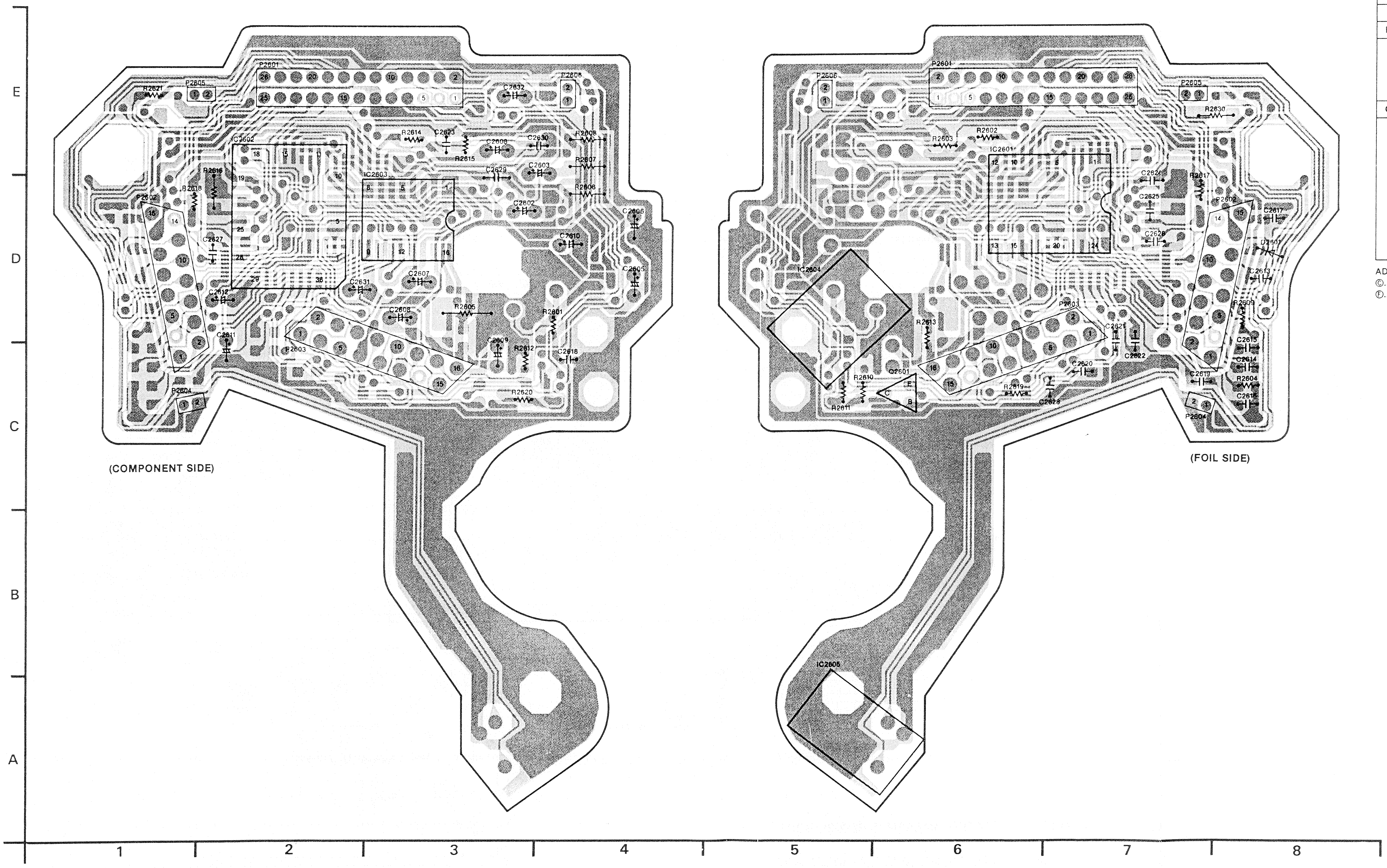
IC2601 (BA6456FS)


20 Vcc
18 H1+
19 H1-
14 H2+
15 H2-
16 H3+
17 H3-
13 CNF
12 EC
11 ECR
HALL AMP
MIX AMP
DRIVER
TSD
CURRENT SENSOR AMP
VREF
TORQUE LIMIT
START /STOP
ERROR AMP
VM 7
A1 8
A2 6
A3 4
RNF 5
GND 1
TL 10
ST SP 9
AMP 1 IN 21
AMP 1 OUT 22
AMP2 IN 24
AMP2 OUT 23
2
VS 3

IC2603 (TDM3700TP1)


IN1L 1
IN1H 16
2 OUT1
OUT1 15
5 IN2L
IN2H 12
3 GND
VCC 14
4 OUT2
OUT2 13
8 IN3L
IN3H 9
6 GND
VCC 11
7 OUT3
OUT3 10

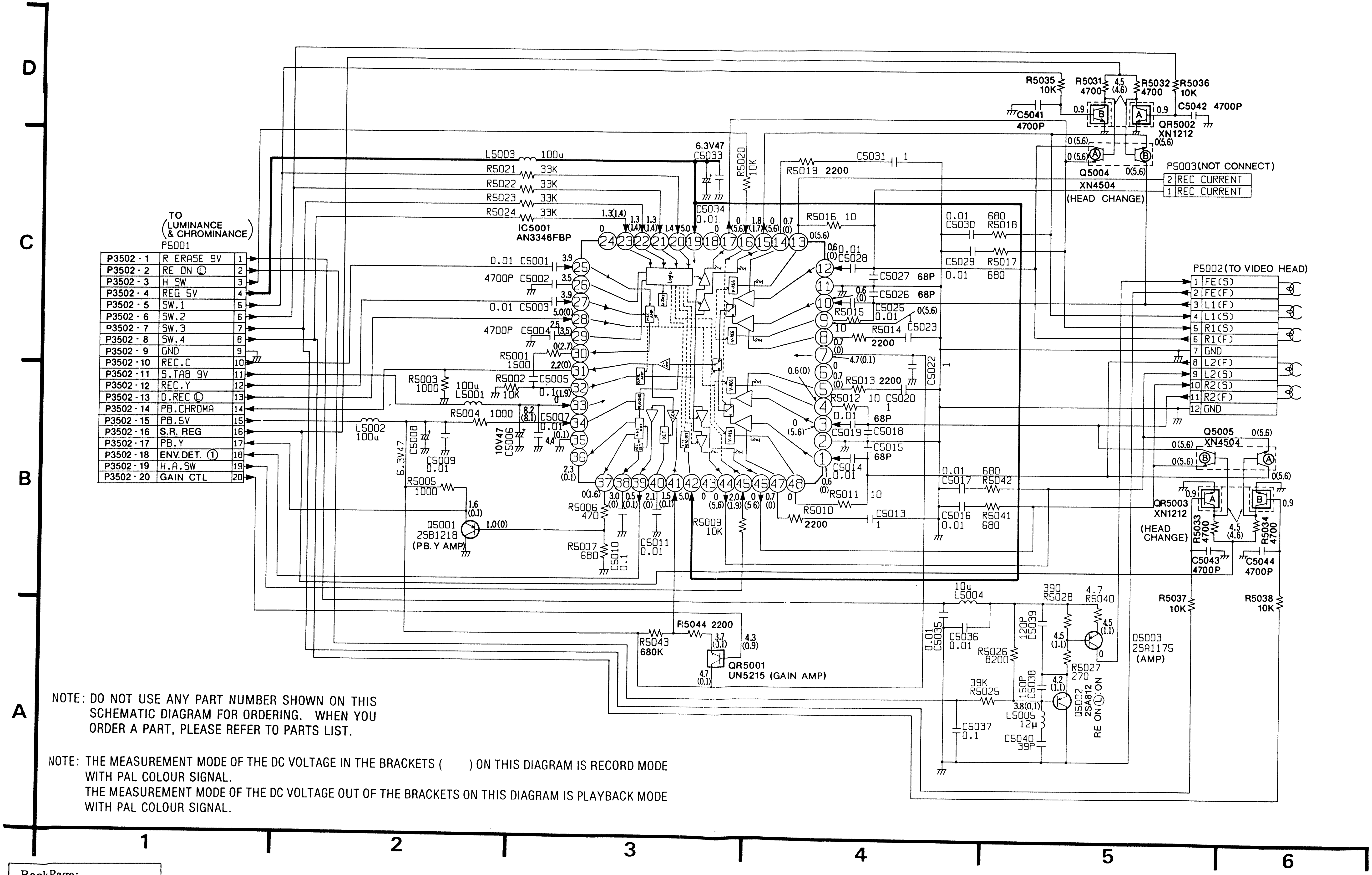
3-29. MOTOR DRIVE C.B.A.


E
D
C
B
A
1
2
3
4
5
6
7
8
(COMPONENT SIDE)
(FOIL SIDE)
P2601
P2602
P2603
P2604
P2605
P2606
IC2601
IC2602
IC2603
IC2604
IC2605
Q2601
D2601
R2601
R2602
R2603
R2604
R2605
R2606
R2607
R2608
R2609
R2610
R2611
R2612
R2613
R2614
R2615
R2616
R2617
R2618
R2619
R2620
R2621
R2630
C2602
C2603
C2605
C2606
C2607
C2608
C2609
C2610
C2611
C2612
C2613
C2614
C2615
C2616
C2617
C2618
C2619
C2620
C2621
C2622
C2623
C2624
C2625
C2626
C2627
C2628
C2629
C2630
C2631
C2632

MOTOR DRIVE C.B.A.	
Transistor	
Q2601	C-6 Ⓕ
Integrated Circuit	
IC2601	D-6 Ⓕ
IC2602	E-2 Ⓒ
IC2603	D-3 Ⓒ
IC2604	D-5 Ⓕ
IC2605	A-5 Ⓕ
Connector	
P2601	E-2 Ⓒ
P2601	E-6 Ⓕ
P2602	D-1 Ⓒ
P2602	D-8 Ⓕ
P2603	C-2 Ⓒ
P2603	C-7 Ⓕ
P2604	C-1 Ⓒ
P2604	C-7 Ⓕ
P2605	E-1 Ⓒ
P2605	E-7 Ⓕ
P2606	E-4 Ⓒ
P2606	E-5 Ⓕ

ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

3-30. HEAD AMP SCHEMATIC DIAGRAM


D
C
B
A
1
2
3
4
5
6
TO (LUMINANCE & CHROMINANCE)
P5001
P3502 - 1 | R ERASE 9V | 1
P3502 - 2 | RE ON Ⓛ | 2
P3502 - 3 | H SW | 3
P3502 - 4 | REG 5V | 4
P3502 - 5 | SW.1 | 5
P3502 - 6 | SW.2 | 6
P3502 - 7 | SW.3 | 7
P3502 - 8 | SW.4 | 8
P3502 - 9 | GND | 9
P3502 - 10 | REC.C | 10
P3502 - 11 | S.TAB 9V | 11
P3502 - 12 | REC.Y | 12
P3502 - 13 | D.REC Ⓛ | 13
P3502 - 14 | PB.CHROMA | 14
P3502 - 15 | PB.5V | 15
P3502 - 16 | S.R. REG | 16
P3502 - 17 | PB.Y | 17
P3502 - 18 | ENV.DET. ① | 18
P3502 - 19 | H.A.SW | 19
P3502 - 20 | GAIN CTL | 20
IC5001
AN3346FBP
L5003 100u
R5021 33K
R5022 33K
R5023 33K
R5024 33K
6.3V47 C5033
C5034 .01
R5020 10K
R5019 2200
C5031 1
R5016 10
0.01 C5030
680 R5018
C5029 0.01
R5017 680
0.01 C5028
C5027 68P
C5026 68P
R5015 10
C5025 0.01
R5014 2200
C5023
C5022 1
R5013 2200
R5012 10
C5020 1
0.01
68P
C5019
C5018
C5015 68P
C5014 0.01
R5011 10
R5010 2200
C5013 1
R5009 10K
0.01 C5017
680 R5042
C5016 0.01
R5041 680
0.01 C5001
4700P C5002
0.01 C5003
4700P C5004
R5001 1500
R5002 C5005
R5003 1000
100u L5001
10K
R5004 1000
8.2 (8.1)
C5007 0.01
L5002 100u
6.3V47 C5008
C5009 0.01
10V47 C5006
R5005 1000
Q5001 2SB1218 (PB.Y AMP)
1.6 (0.1)
1.0(0)
R5006 470
R5007 680
C5010 0.1
C5011 0.01
R5044 2200
R5043 680K
QR5001 UN5215 (GAIN AMP)
4.3 (0.9)
3.7 (3.1)
4.7 (0.1)
R5035 10K
R5031 4700
R5032 4700
R5036 10K
C5041 4700P
C5042 4700P
QR5002 XN1212
Q5004 XN4504 (HEAD CHANGE)
P5003(NOT CONNECT)
2 | REC CURRENT
1 | REC CURRENT
P5002(TO VIDEO HEAD)
1 | FE(S)
2 | FE(F)
3 | L1(F)
4 | L1(S)
5 | R1(S)
6 | R1(F)
7 | GND
8 | L2(F)
9 | L2(S)
10 | R2(S)
11 | R2(F)
12 | GND
Q5005 XN4504
QR5003 XN1212 (HEAD CHANGE)
R5033 4700
R5034 4700
C5043 4700P
C5044 4700P
R5037 10K
R5038 10K
10u L5004
390 R5028
4.7 R5040
C5035 0.01
C5036 0.01
120P C5039
R5026 8200
Q5003 2SA1175 (AMP)
R5027 270
39K R5025
150P C5038
Q5002 2SA812 RE ON Ⓛ:ON
L5005 12μ
C5037 0.1
C5040 39P

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

BackPage:
MOTOR DRIVE Section

3-31. HEAD AMP C.B.A.

HEAD AMP C.B.A.

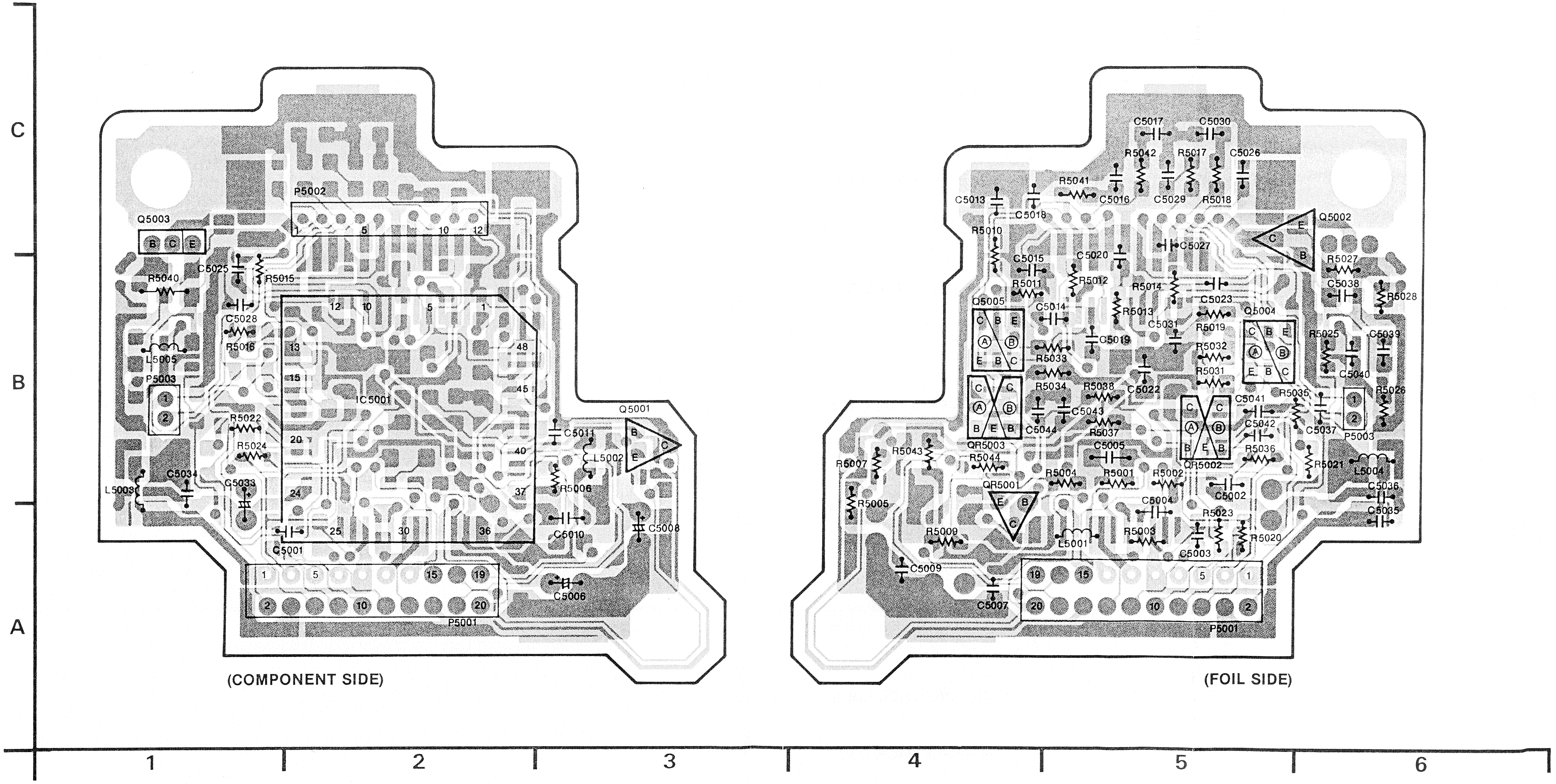
Transistor	
Q5001	B-3 Ⓒ
Q5002	C-6 Ⓕ
Q5003	C-1 Ⓒ
Q5004	B-5 Ⓕ
Q5005	B-4 Ⓕ

Transistor & Resistor	
QR5001	B-4 Ⓕ
QR5002	B-5 Ⓕ
QR5003	B-4 Ⓕ

Integrated Circuit	
IC5001	B-2 Ⓒ

Connector	
P5001	A-2 Ⓒ
P5001	C-5 Ⓕ
P5002	D-2 Ⓒ
P5003	B-1 Ⓒ
P5003	B-6 Ⓕ

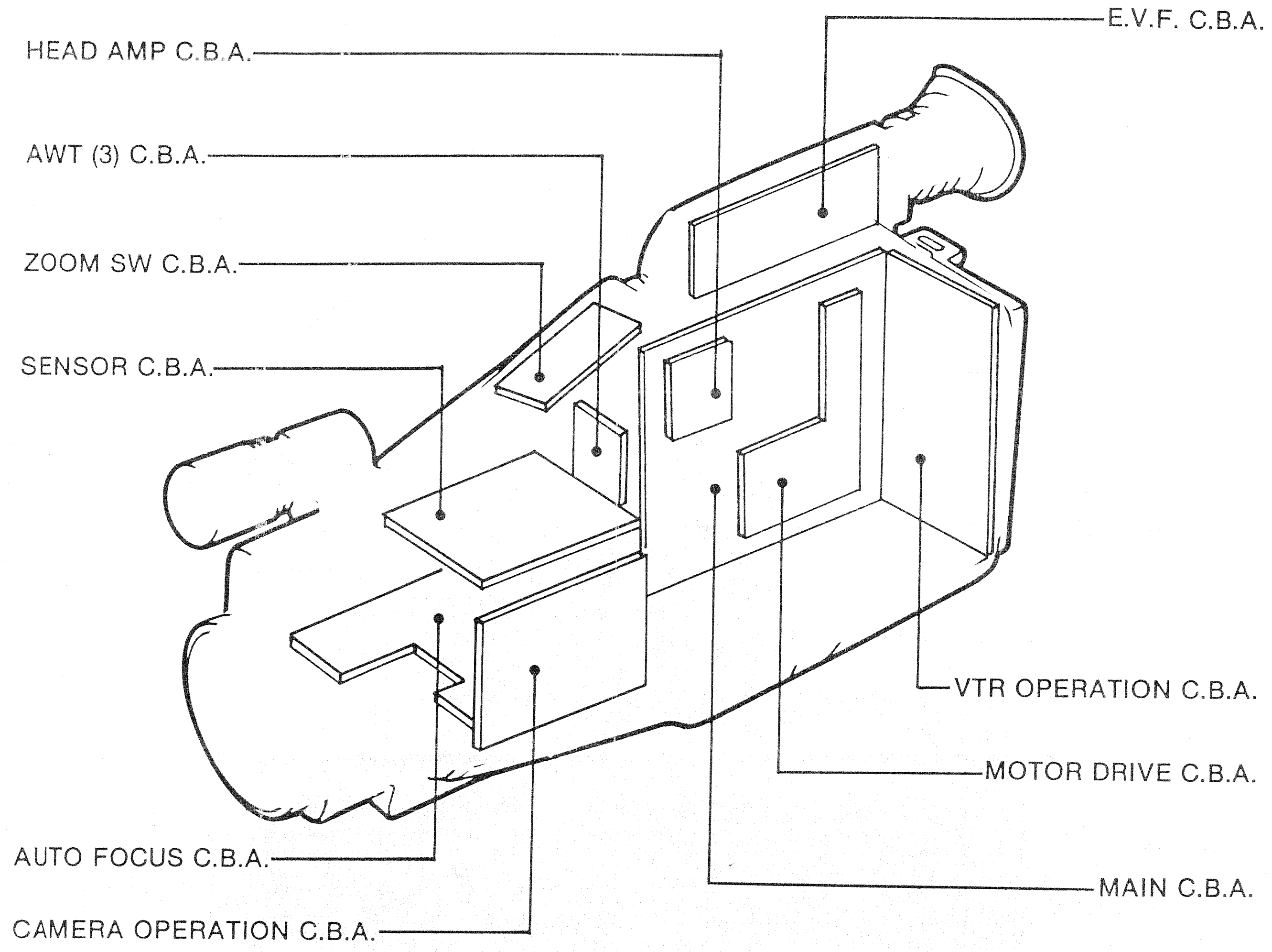
ADDRESS INFORMATION
Ⓒ...COMPONENT SIDE
Ⓕ...FOIL SIDE

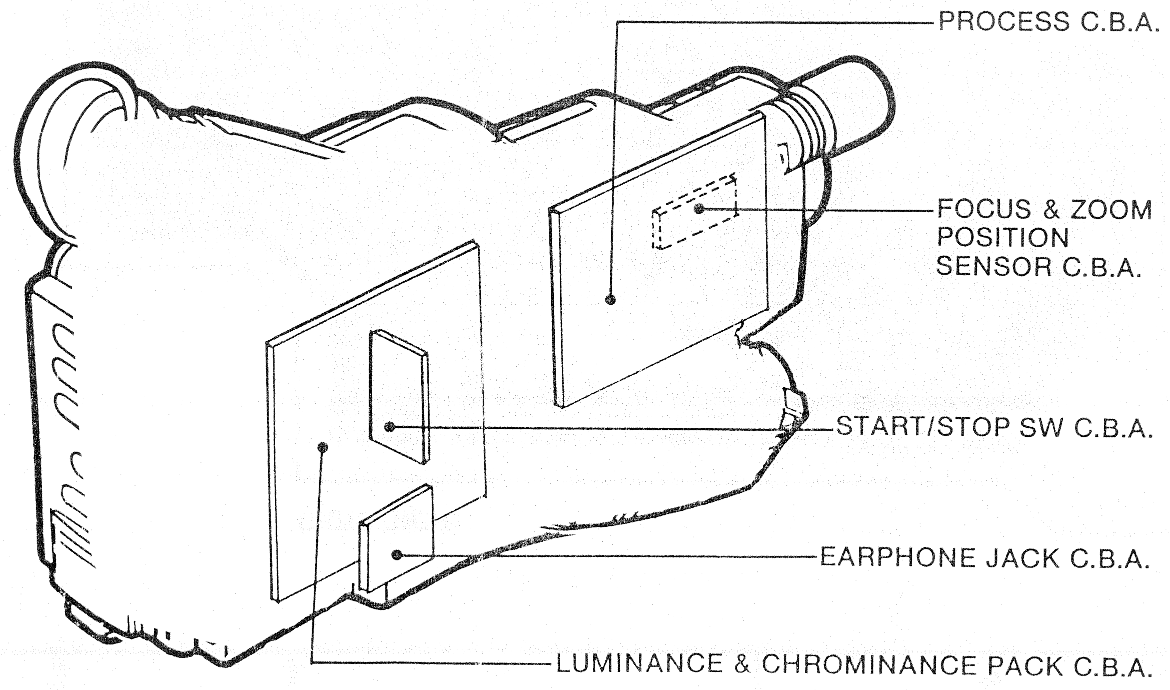

C
B
A
1
2
3
4
5
6
P5002
1
5
10
12
Q5003
B
C
E
C5025
R5015
R5040
C5028
R5016
L5005
P5003
1
2
IC5001
12
10
5
1
13
15
48
45
20
40
24
37
25
30
36
R5022
R5024
C5034
C5033
L5003
C5001
C5011
L5002
Q5001
B
C
E
R5006
C5010
C5008
C5006
P5001
1
5
15
19
2
10
20
C5017
C5030
R5042
R5017
C5026
R5041
C5013
C5018
C5016
C5029
R5018
Q5002
R5010
C5015
C5020
C5027
R5027
R5011
R5012
R5014
C5038
R5028
Q5005
C5014
R5013
C5023
C5031
Q5004
R5019
R5025
C5039
C5019
R5033
R5032
R5031
C5040
R5034
R5038
C5022
R5035
R5026
C5043
C5041
C5044
R5037
C5042
C5037
QR5003
C5005
R5036
R5007
R5043
R5044
QR5002
R5021
L5004
QR5001
R5004
R5001
R5002
C5002
C5036
R5005
C5004
C5035
R5023
R5009
R5003
R5020
L5001
C5003
C5009
C5007
19
15
5
1
20
10
2
P5001

(COMPONENT SIDE)

(FOIL SIDE)

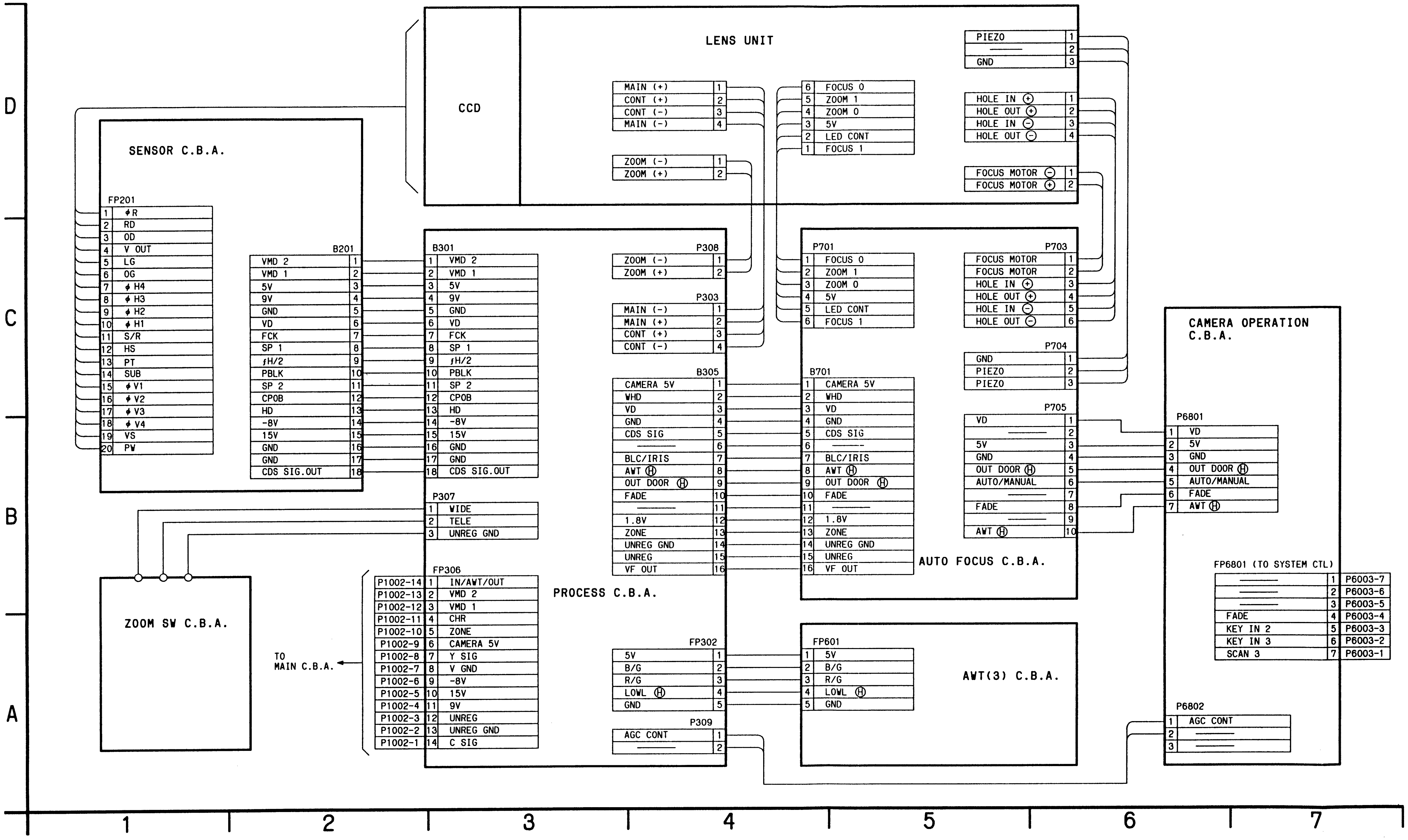
3-32. CIRCUIT BOARD LAYOUT


E.V.F. C.B.A.
HEAD AMP C.B.A.
AWT (3) C.B.A.
ZOOM SW C.B.A.
SENSOR C.B.A.
VTR OPERATION C.B.A.
MOTOR DRIVE C.B.A.
AUTO FOCUS C.B.A.
MAIN C.B.A.
CAMERA OPERATION C.B.A.

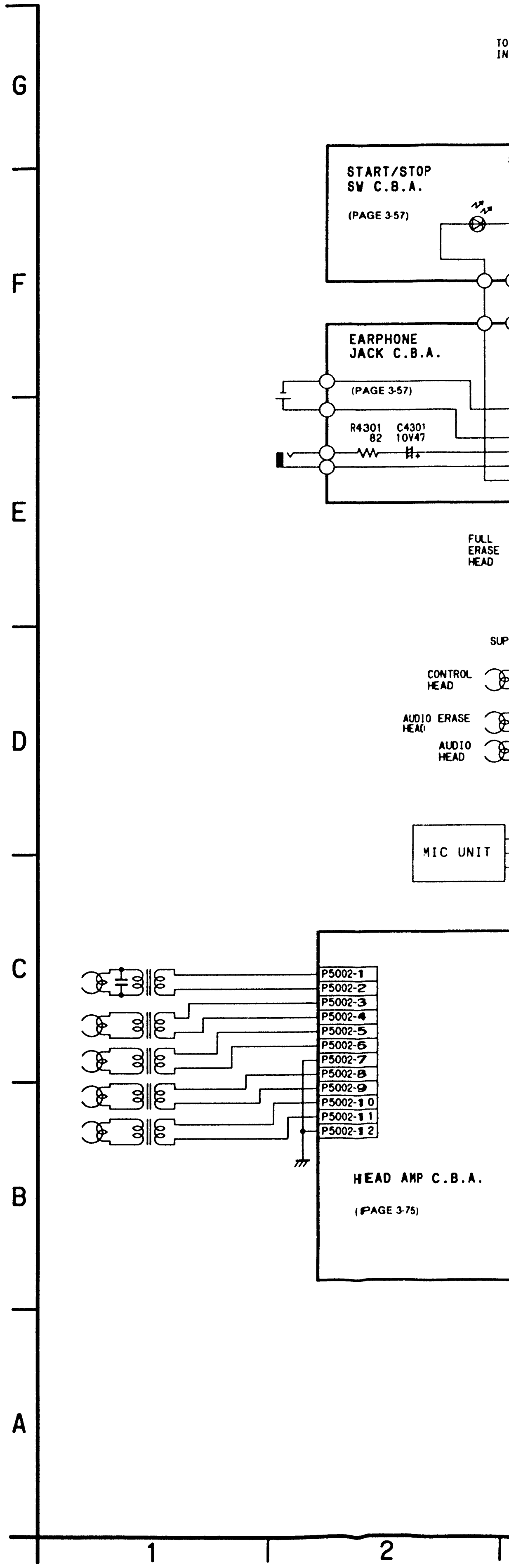

PROCESS C.B.A.
FOCUS & ZOOM POSITION SENSOR C.B.A.
START/STOP SW C.B.A.
EARPHONE JACK C.B.A.
LUMINANCE & CHROMINANCE PACK C.B.A.

Back Page:
HEAD AMP Section

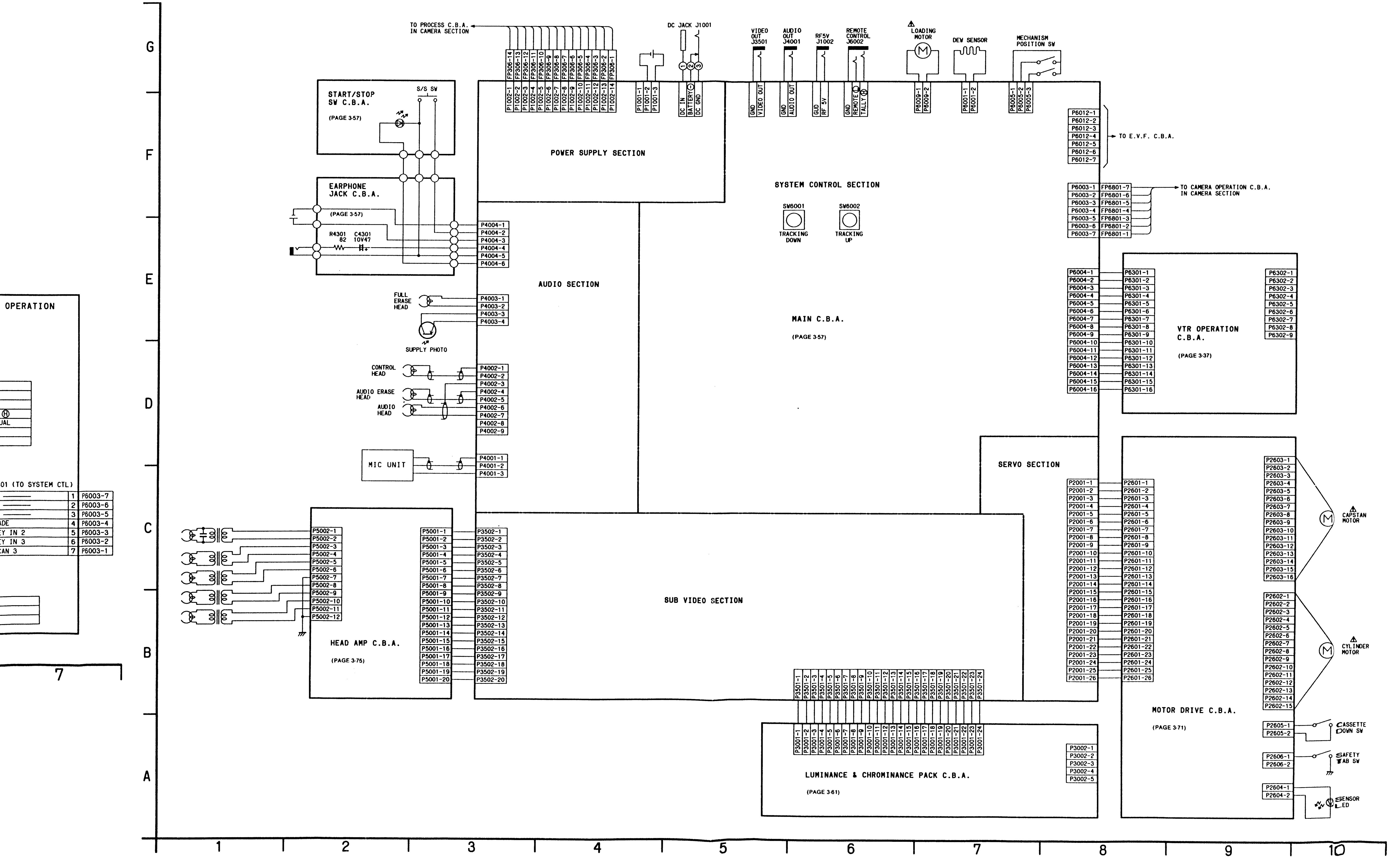
3-33. CAMERA INTERCONNECTION SCHEMATIC DIAGRAM


LENS UNIT
CCD
SENSOR C.B.A.
FP201
1 φR
2 RD
3 OD
4 V OUT
5 LG
6 OG
7 φH4
8 φH3
9 φH2
10 φH1
11 S/R
12 HS
13 PT
14 SUB
15 φV1
16 φV2
17 φV3
18 φV4
19 VS
20 PW
B201
VMD 2
VMD 1
5V
9V
GND
VD
FCK
SP 1
fH/2
PBLK
SP 2
CPOB
HD
-8V
15V
GND
GND
CDS SIG.OUT
ZOOM SW C.B.A.
TO MAIN C.B.A.
PROCESS C.B.A.
B301
P307
WIDE
TELE
UNREG GND
FP306
P1002-14 IN/AWT/OUT
P1002-13 VMD 2
P1002-12 VMD 1
P1002-11 CHR
P1002-10 ZONE
P1002-9 CAMERA 5V
P1002-8 Y SIG
P1002-7 V GND
P1002-6 -8V
P1002-5 15V
P1002-4 9V
P1002-3 UNREG
P1002-2 UNREG GND
P1002-1 C SIG
P308
ZOOM (-)
ZOOM (+)
P303
MAIN (-)
MAIN (+)
CONT (+)
CONT (-)
B305
CAMERA 5V
WHD
VD
GND
CDS SIG
BLC/IRIS
AWT Ⓗ
OUT DOOR Ⓗ
FADE
1.8V
ZONE
UNREG GND
UNREG
VF OUT
FP302
5V
B/G
R/G
LOWL Ⓗ
GND
P309
AGC CONT
PIEZO
GND
HOLE IN ⊕
HOLE OUT ⊕
HOLE IN ⊖
HOLE OUT ⊖
FOCUS MOTOR ⊖
FOCUS MOTOR ⊕
FOCUS 0
ZOOM 1
ZOOM 0
5V
LED CONT
FOCUS 1
AUTO FOCUS C.B.A.
P701
P703
FOCUS MOTOR
P704
PIEZO
B701
P705
AUTO/MANUAL
AWT Ⓗ
FP601
AWT(3) C.B.A.
CAMERA OPERATION C.B.A.
P6801
VD
5V
GND
OUT DOOR Ⓗ
AUTO/MANUAL
FADE
AWT Ⓗ
FP6801 (TO SYSTEM CTL)
FADE
KEY IN 2
KEY IN 3
SCAN 3
P6003-7
P6003-6
P6003-5
P6003-4
P6003-3
P6003-2
P6003-1
P6802
AGC CONT
A
B
C
D
1
2
3
4
5
6
7

3-34. VTR INTERCONNECTIO


TO
IN
START/STOP SW C.B.A.
(PAGE 3-57)
EARPHONE JACK C.B.A.
(PAGE 3-57)
R4301 82
C4301 10V47
FULL ERASE HEAD
SUP
CONTROL HEAD
AUDIO ERASE HEAD
AUDIO HEAD
MIC UNIT
P5002-1
P5002-2
P5002-3
P5002-4
P5002-5
P5002-6
P5002-7
P5002-8
P5002-9
P5002-10
P5002-11
P5002-12
HEAD AMP C.B.A.
(PAGE 3-75)
G
F
E
D
C
B
A
1
2

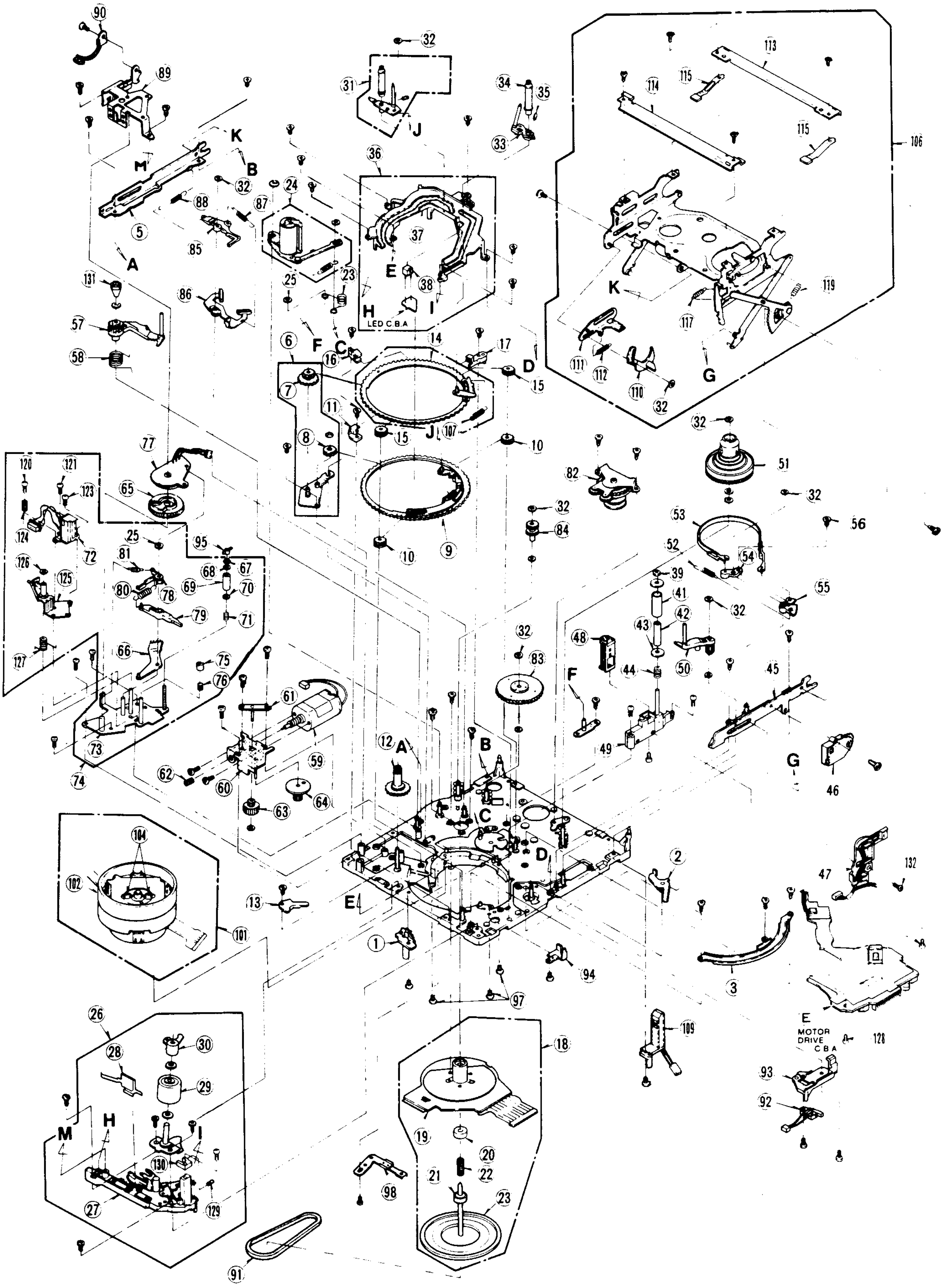
3-34. VTR INTERCONNECTION SCHEMATIC DIAGRAM


TO PROCESS C.B.A. IN CAMERA SECTION
FP306-1 … FP306-14
P1002-1 … P1002-14
DC JACK J1001
P1001-1
P1001-2
P1001-3
DC IN
BATTERY
DC GND
POWER SUPPLY SECTION
START/STOP SW C.B.A.
(PAGE 3-57)
S/S SW
EARPHONE JACK C.B.A.
(PAGE 3-57)
R4301 82
C4301 10V47
P4004-1 … P4004-6
AUDIO SECTION
FULL ERASE HEAD
SUPPLY PHOTO
P4003-1 … P4003-4
CONTROL HEAD
AUDIO ERASE HEAD
AUDIO HEAD
P4002-1 … P4002-9
MIC UNIT
P4001-1 … P4001-3
VIDEO OUT J3501
AUDIO OUT J4001
RF5V J1002
REMOTE CONTROL J6002
GND
VIDEO OUT
AUDIO OUT
GND
RF 5V
REMOTE
TALLY
LOADING MOTOR
P6009-1
P6009-2
DEW SENSOR
P6001-1
P6001-2
MECHANISM POSITION SW
P6005-1
P6005-2
P6005-3
SYSTEM CONTROL SECTION
SW6001 TRACKING DOWN
SW6002 TRACKING UP
MAIN C.B.A.
(PAGE 3-57)
P6012-1 … P6012-7
TO E.V.F. C.B.A.
P6003-1 … P6003-7
FP6801-7 … FP6801-1
TO CAMERA OPERATION C.B.A. IN CAMERA SECTION
P6004-1 … P6004-16
P6301-1 … P6301-16
VTR OPERATION C.B.A.
(PAGE 3-37)
P6302-1 … P6302-9
SERVO SECTION
P2001-1 … P2001-26
P2601-1 … P2601-26
MOTOR DRIVE C.B.A.
(PAGE 3-71)
P2603-1 … P2603-16
CAPSTAN MOTOR
P2602-1 … P2602-15
CYLINDER MOTOR
P2605-1
P2605-2
CASSETTE DOWN SW
P2606-1
P2606-2
SAFETY TAB SW
P2604-1
P2604-2
SENSOR LED
HEAD AMP C.B.A.
(PAGE 3-75)
P5002-1 … P5002-12
P5001-1 … P5001-20
P3502-1 … P3502-20
SUB VIDEO SECTION
P3501-1 … P3501-24
P3001-1 … P3001-24
LUMINANCE & CHROMINANCE PACK C.B.A.
(PAGE 3-61)
P3002-1 … P3002-5
OPERATION
01 (TO SYSTEM CTL)
P6003-7
P6003-6
P6003-5
P6003-4
P6003-3
P6003-2
P6003-1
ADE
EY IN 2
EY IN 3
EAN 3
JAL
7
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

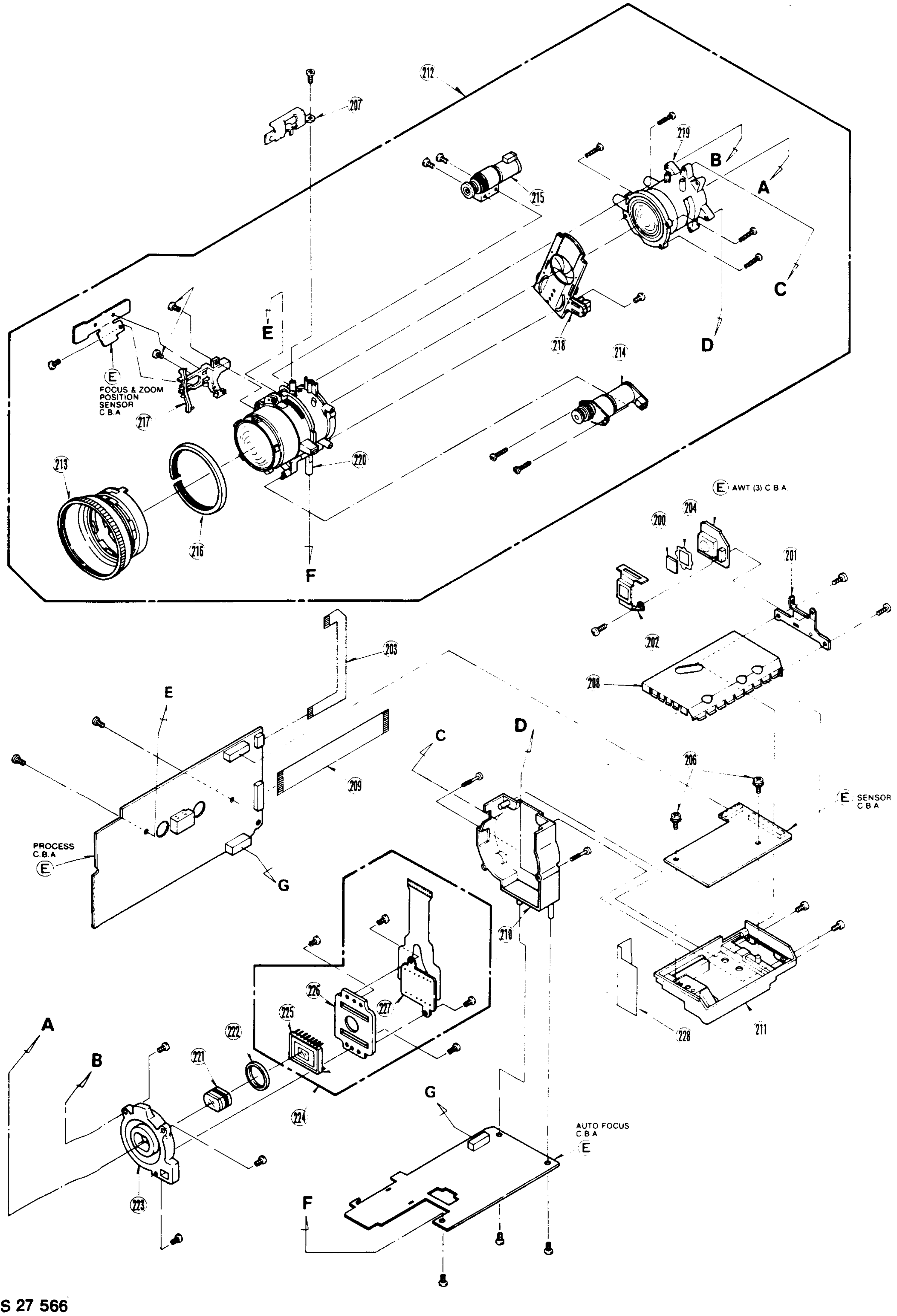
SECTION 4
EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEWS

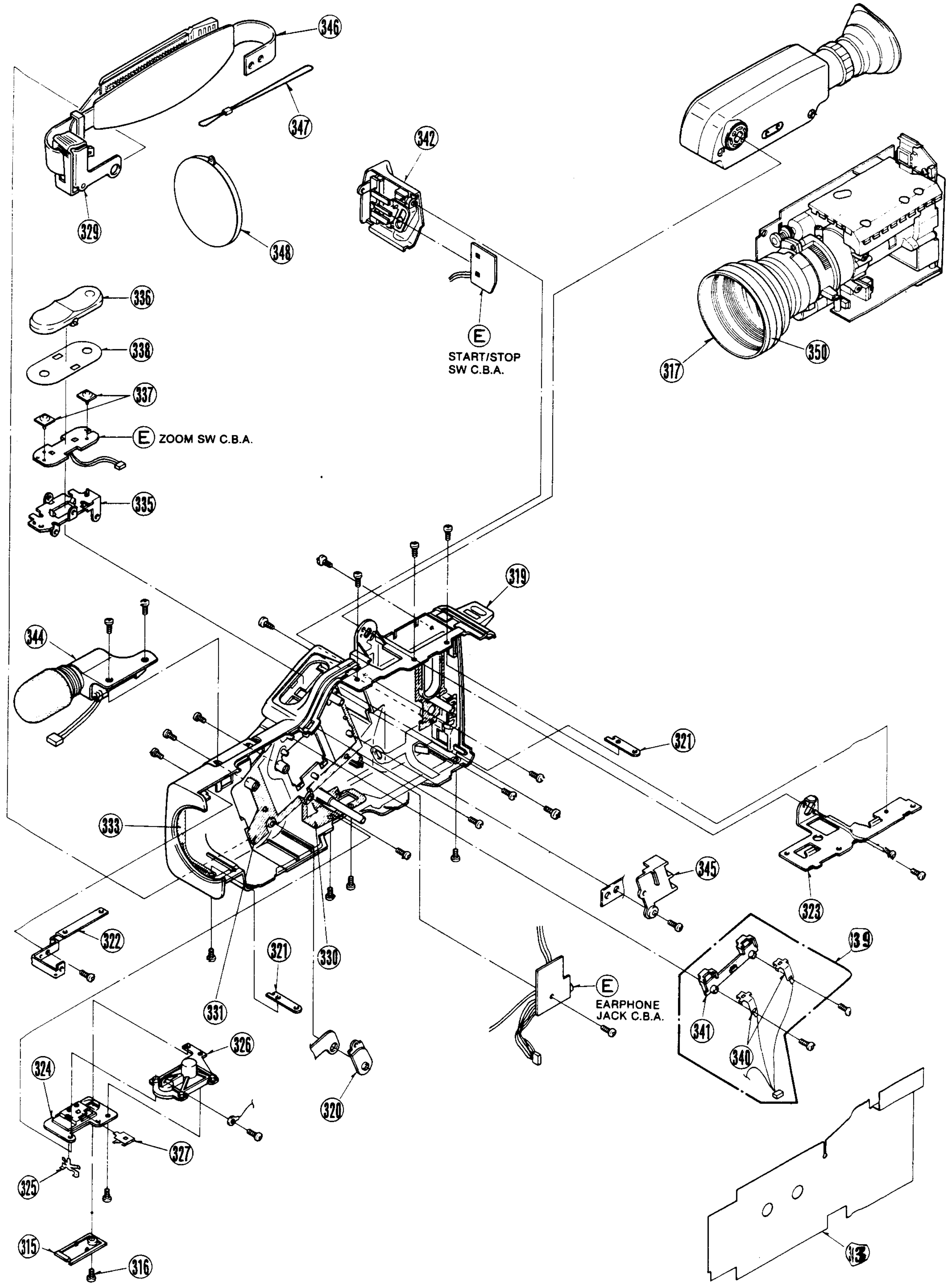
❶ VTR MECHANISM SECTION

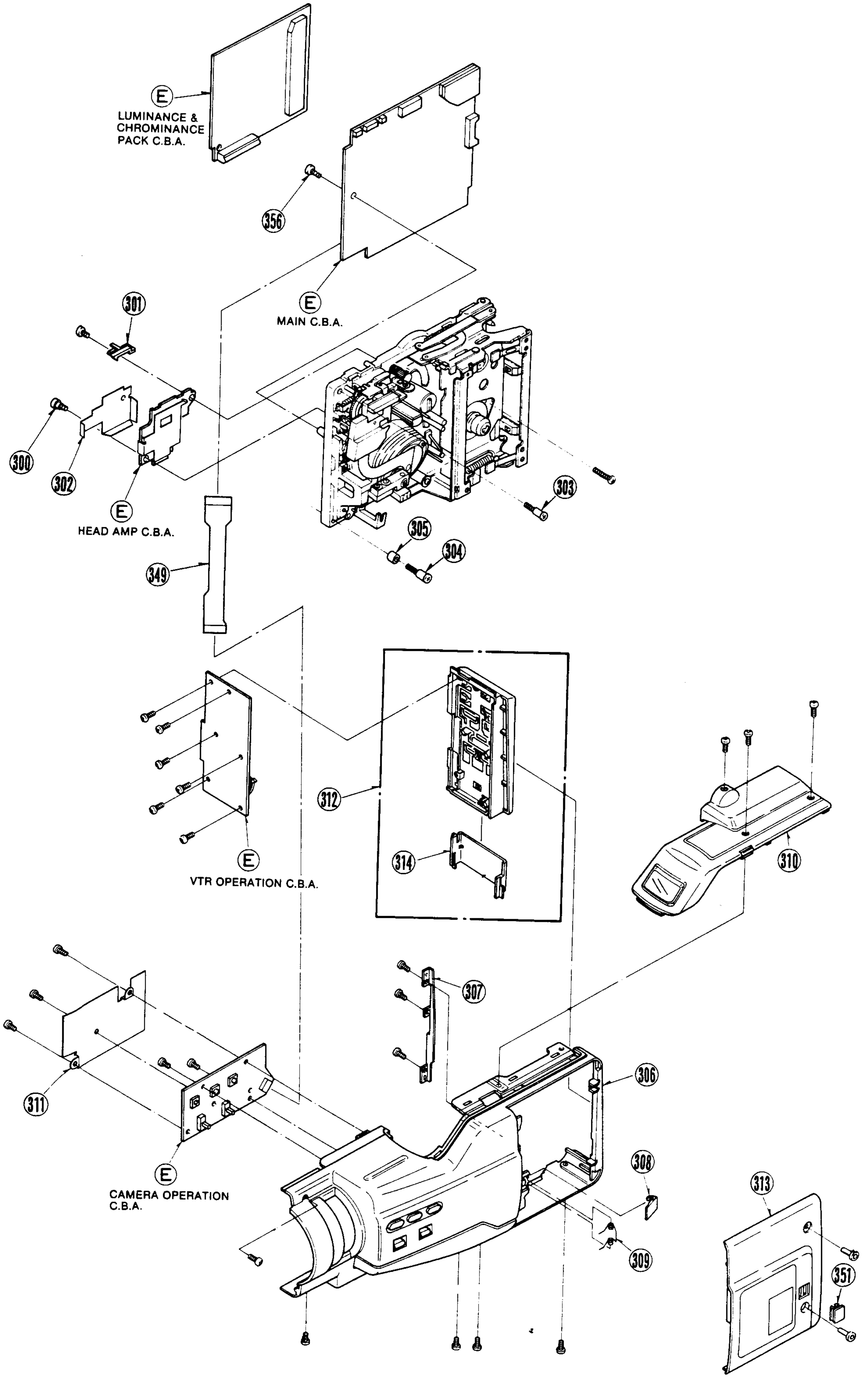

90
89
K
M
B
32
88
87
24
36
31
J
34
35
33
113
114
115
115
106
5
85
A
131
57
58
86
25
23
37
E
38
H
LED C.B.A
I
F
C
6
16
14
17
D
15
7
11
8
15
J
107
10
9
10
K
119
117
111
112
110
32
G
32
51
32
56
77
120
121
123
124
72
65
126
125
127
25
95
81
67
68
69
70
80
78
79
71
66
75
76
73
74
82
32
84
53
52
54
39
41
42
43
44
50
32
55
48
32
83
F
49
45
G
46
61
59
62
60
63
64
12
A
B
C
D
2
E
13
1
94
97
104
102
101
3
47
132
E
MOTOR DRIVE C.B.A
128
109
93
92
26
28
30
29
M
H
I
130
27
129
18
19
20
21
22
23
98
91

CAMERA LENS SECTION

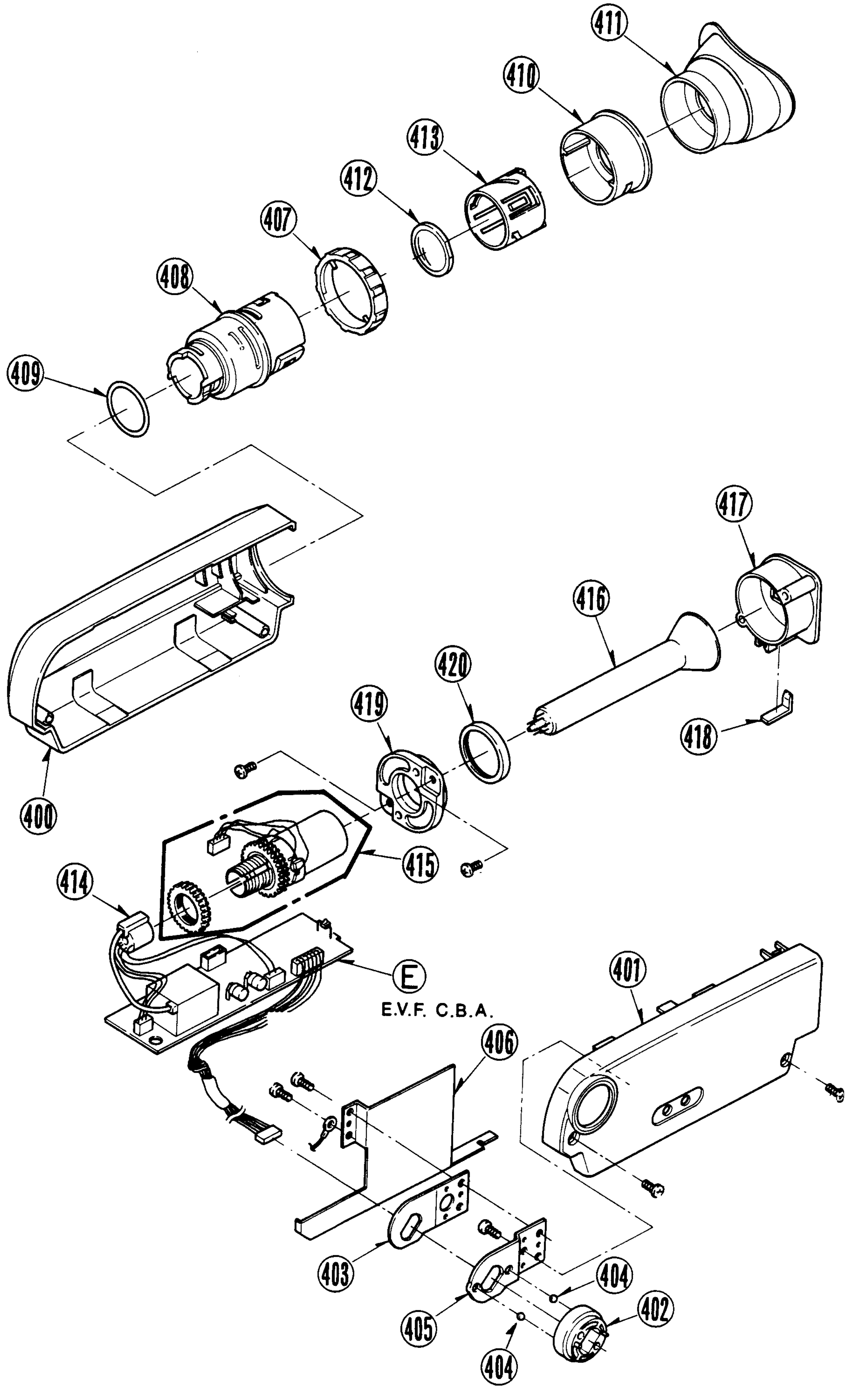

212
207
219
B
A
215
C
E
218
214
D
E
FOCUS & ZOOM POSITION SENSOR C.B.A
217
213
216
220
F
E AWT (3) C.B.A
204
200
201
202
203
208
E
C
D
209
206
E SENSOR C.B.A
PROCESS C.B.A.
E
G
210
226
227
225
222
221
A
B
228
211
224
G
AUTO FOCUS C.B.A
E
223
F

CHASSIS & FRAME SECTION

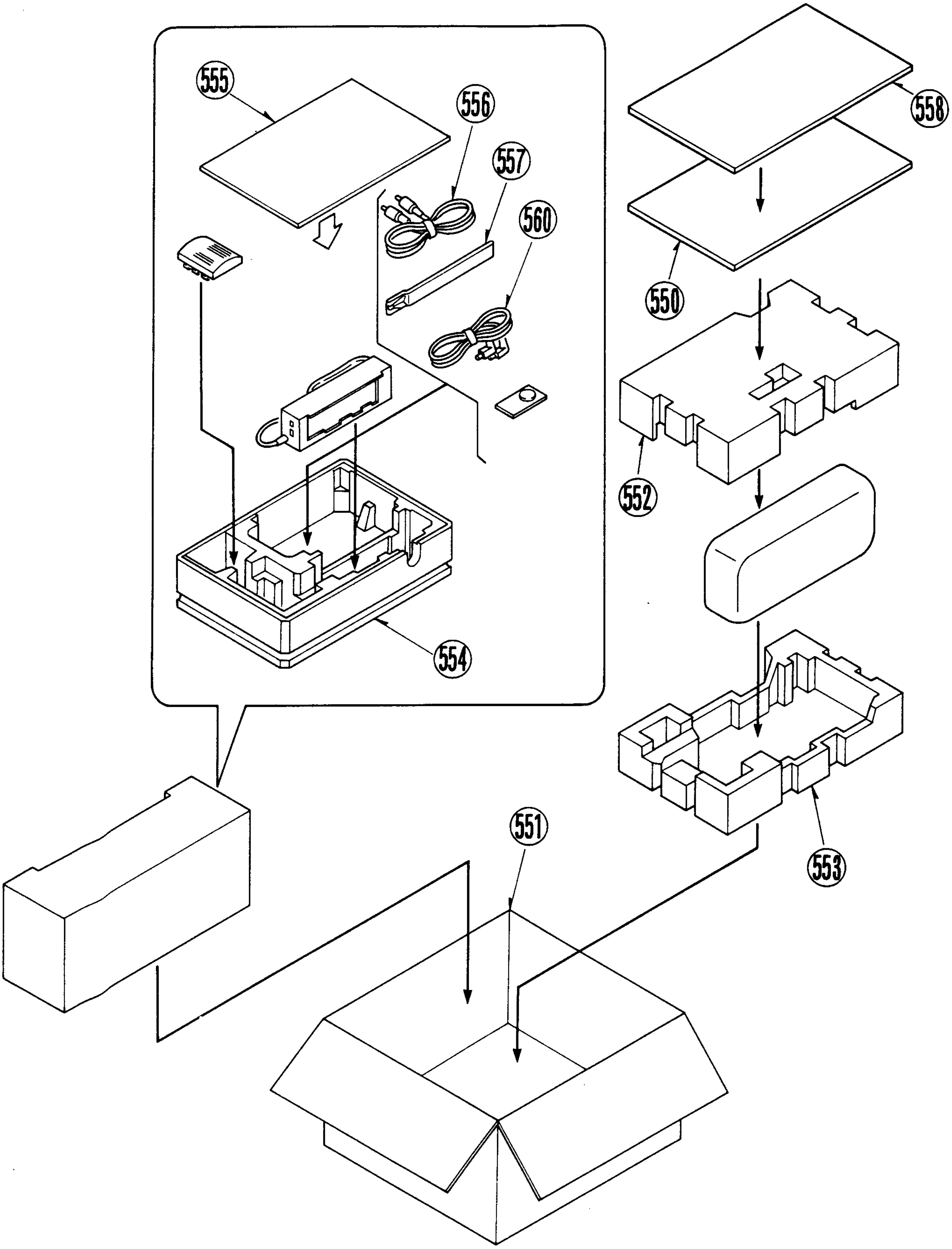

346
347
329
348
342
E
START/STOP SW C.B.A.
317
350
336
338
337
E ZOOM SW C.B.A.
335
319
344
321
333
323
345
322
321
330
331
E
EARPHONE JACK C.B.A.
339
341
340
326
324
320
327
325
315
316
313


E
LUMINANCE & CHROMINANCE PACK C.B.A.
E
MAIN C.B.A.
E
HEAD AMP C.B.A.
E
VTR OPERATION C.B.A.
E
CAMERA OPERATION C.B.A.

E.V.F. SECTION


E
E.V.F. C.B.A.

PACKING PARTS & ACCESSORIES SECTION


555
556
557
560
554
558
550
552
553
551

Mechanical partslist VKR6843

1	4822 403 53675	LOADING GUIDE (T)
2	4822 403 53765	EJECT LEVER UNIT
3	4822 403 53672	LOADING GUIDE (S)
4	4822 466 82615	CASS.SUPPORT PLATE
5	4822 403 53755	CASS.STAND (T)
6	4822 403 53699	LOAD.GEAR BASE UNIT
7	4822 522 32567	LOADING GEAR (S)
8	4822 522 32568	LOADING GEAR (T)
9	4822 522 32733	LOAD.RING (T) UNIT
10	4822 522 32566	RING GUIDE GEAR (T)
11	4822 532 11909	RING GUIDE (2)
12	4822 522 32732	TERMINAL GEAR
13	4822 532 11912	RING LIMITER
14	4822 532 11913	LOAD.RING (S) UNIT
15	4822 522 32565	RING GUIDE GEAR (S)
16	4822 532 11908	RING GUIDE (1)
17	4822 532 11911	RING GUIDE (3)
18	4822 361 21189	CAPSTAM MOTOR UNIT
19	4822 466 82397	STATOR UNIT
20	4822 532 61127	UPPER BEARING
21	4822 532 61128	UNDER BEARING
22	4822 492 70485	THRUST SPRING
23	4822 492 32948	CAM SPRING
24	4822 403 53928	PRESSURE LEVER UNIT
25	4822 532 52067	CUT WASHER (B)
26	4822 403 53941	V STOPPER BASE UNIT
27	4822 403 53939	V STOPPER BASE
28	4822 466 82398	PRESSURE PLATE
29	4822 528 90753	IMPEDANCE ROLLER
30	4822 532 52185	SUPPLY UPPER LIMITER
31	4822 403 53954	SHAFT HOLDER(T)UNIT
32	4822 532 52068	CUT WASHER (A)
33	4822 403 53703	SHAFT HOLDER S1 UNIT
34	4822 528 90706	S1 ROLLER POST UNIT
35	4822 502 13187	SCREW
37	4822 462 30462	LOAD.GUIDE
38	4822 130 33959	SENSOR LED
39	4822 505 10776	NUT
41	4822 528 90754	S1 ROLLER
42	4822 532 52189	S1 COLLAR
43	4822 532 52191	S1 LOWER LIMITER
44	4822 492 52156	S1 SPRING
45	4822 403 53951	CASS.STAND(S)1 UNIT
46	4822 403 53709	DAMPER UNIT
47	4822 403 53942	TAPE END DETECT.UNIT
48	4822 249 40261	FE HEAD
49	4822 403 53953	ER.HEAD BASE(1)UNIT
50	4822 403 53956	TENSION ARM UNIT
51	4822 528 10771	SUPPLY REEL TABLE
52	4822 492 32965	TENSION SPRING
53	4822 403 10297	TENSION BAND UNIT
53	4822 403 10297	TENSION BAND UNIT
55	4822 403 53674	BAND ADJUSTM.PIECE
56	4822 502 13185	BAND ARM SCREW
57	4822 403 53706	TAPE GUIDE ARM F UN.
58	4822 492 32949	TAPE GUIDE ARM SPR.
59	4822 361 30293	LOAD.MOTOR (1) UNIT
60	4822 403 53948	LOAD.MOTOR BRACK.UN.
61	4822 403 53949	MOTOR GEAR BASE UNIT
62	4822 502 13513	WORM ADJUSTM.SCREW
63	4822 522 32838	MOTOR GEAR A
64	4822 522 32837	MOTOR GEAR B
65	4822 522 32572	CONTROL CAM
66	4822 403 53711	SECTOR GEAR UNIT
67	4822 530 70475	T3 POST UNIT
68	4822 532 52188	T3 POST FLANGE
69	4822 532 52186	P1 SPACER
70	4822 532 52187	T3 POST BOTTOM
71	4822 492 32954	T3 POST SPRING
72	4822 249 10393	A/C HEAD UNIT
73	4822 403 53952	A/C HEAD PLATE UNIT
75	4822 505 11017	P2 POST ADJUST NUT
76	4822 492 52155	P2 POST ADJUST SPRI.
77	4822 528 30347	MODE SELECT SWITCH
78	4822 403 53708	TAPE GUID.LEVER(2)U.
79	4822 403 53945	TAPE GUID.LEVER(1)
80	4822 492 33128	TAPE GUID.LEVER SPR.
81	4822 492 33127	TAPE GUID.LEV.SPR(2)
82	4822 522 32575	IDLER UNIT
83	4822 522 32573	CLUTCH GEAR(T)UNIT
84	4822 462 41224	TAKEUP REEL GEAR
85	4822 403 53679	SOFT BRAKE ARM
86	4822 403 53707	SOFT BRAKE UNIT
87	4822 492 32951	SOFT BRAKE SPRING(1)
88	4822 492 33126	SOFT BRAKE SPRING(2)
89	4822 403 53943	H.A PLATE
90	4822 466 92673	HUMIDITY (DEW) RES.
91	4822 358 30899	DRIVE BELT
92	4822 276 12702	CASSETTE DOWN SW
93	4822 403 53944	CASS.DOWN SW HOLDER
94	4822 403 53665	MR SHIELD COVER
95	4822 462 41328	T3 POST CAP
97	4822 502 13184	CYLINDER SCREW
98	4822 403 53712	EARTH BRUSH UNIT
101	4822 691 20548	CYLINDER UNIT
102	4822 691 20522	UPPER CYLINDER UNIT
104	4822 502 13057	UPPER CYLINDER SCREW
106	4822 691 20565	CASSETTE UP UNIT
107	4822 492 32953	LOAD.RING(S)SPRING
109	4822 277 21377	SAFETY TAP SW
110	4822 403 53757	OPEN LEVER
111	4822 403 53764	OP.SLIDE LEV.(1)UNIT
112	4822 492 32957	OP.SLIDE LEV.SPRING
113	4822 432 60342	HOLDER STAY (F)
114	4822 432 60341	HOLDER STAY (R)
115	4822 492 70496	CATCH PLATE
117	4822 492 33125	LOCK SPRING
119	4822 492 33052	SPRING (S)
120	4822 502 13515	A/C SCREW
121	4822 502 13516	ADJUST SCREW
123	4822 502 13517	AZIMUTH SCREW
124	4822 492 33129	A/C HEAD SPRING
125	4822 403 53955	A/C HEAD ARM (1)UNIT
126	4822 505 10776	NUT
127	4822 492 42437	A/C SPRING
128	4822 502 13512	SCREW (A)
129	4822 502 13518	SCREW
130	4822 462 71637	V STOPPER
131	4822 505 11016	ADJUST NUT
132	4822 502 13519	TAPE END DETECT.UNIT
200	4822 380 20364	IR CUT FILTER
202	4822 403 53946	AWT HOOK SPRING
203	4822 320 50155	AWT FLEX.CORD
204	4822 466 61882	IR SPACER
206	4822 502 13061	SENSOR C.B.A.SCREW
207	4822 403 53947	CAMERA FIXING ANGLE
209	4822 321 23102	PROC.FLEX.CORD
213	4822 532 21401	FOCUS RING
214	4822 361 30291	FOCUS MOTOR UNIT
215	4822 361 30292	ZOOM MOTOR UNIT
216	4822 532 11845	FOCUS FASTENER
217	4822 403 53962	POSITION SENS. HOLDER
218	4822 361 21116	IRIS UNIT
219	4822 381 11085	LENS (1) UNIT
220	4822 381 11084	LENS (2) UNIT

221	4822 380 30261	CHRYSTAL FILTER
222	4822 466 61654	CCD CUSHION
223	4822 218 10222	ACTUATER
224	4822 691 20549	CCD UNIT
225	4822 209 62081	CCD
225	4822 209 62081	CCD
226	4822 466 61688	CCD PLATE
227	4822 320 50156	CCD FLEXIBLE CORD
300	4822 502 13512	SCREW (A)
301	4822 462 71641	SPACER
303	4822 502 13514	SCREW
304	4822 502 13188	SCREW
305	4822 532 52072	SCREW SPACER
306	4822 432 92531	SIDE CASE(R)(1)UNIT
308	4822 403 53965	SAFETY LEVER
309	4822 492 42438	SAFETY SPRING
310	4822 432 92532	TOP CASE UNIT
312	4822 432 60382	VTR OPER.CASE(1)UNIT
313	4822 443 62931	CASSETTE COVER
314	4822 432 60381	CURSOR
315	4822 432 60379	BATTERY LID
316	4822 502 13511	SCREW
317	4822 532 61166	LENS HOOD
319	4822 432 92533	SIDE CASE(L)(1)UNIT
320	4822 403 53958	BATTERY LOCK HOLDER
321	4822 403 53966	FIXING ANGLE (B)
322	4822 403 53967	MIC FIXING ANGLE
323	4822 403 53968	EVF FIXING ANGLE
324	4822 403 53963	BATTERY BRACKET
325	4822 492 70497	BATTERY TERMINAL(B)
326	4822 403 53964	TRIPOD FIX.BRACKET
327	4822 290 80843	BATT.TERMINAL(A)
329	4822 403 53969	GRIP BELT ANGLE UN.
335	4822 403 53961	ZOOM BUTTON HOLDER
336	4822 410 60557	ZOOM BUTTON
337	4822 276 12171	ZOOM RUBBER SWITCH
338	4822 466 92674	ZOOM BUTTON SHEET
339	4822 290 60938	BATTERY TERM.UNIT
340	4822 492 70498	BATTERY TERM.PLATE
340	4822 492 70498	BATTERY TERM.PLATE
341	4822 403 53957	BATTERY TERM.HOLDER
342	4822 403 53971	GR.BELT HOOK COV.UN.
344	4822 242 30204	MIC UNIT
345	4822 403 53959	GR.BELT SUPP.ANGLE
346	4822 498 30164	GRIP BELT UNIT
347	4822 401 11275	HOOD STRAP
348	4822 462 71633	HOOD CAP
349	4822 320 50157	FLEXIBLE CARD
350	4822 466 61883	LENS HOOD RING
351	4822 432 60386	PUSH COVER
356	4822 502 13566	MAIN SCREW
400	4822 432 60385	E.V.F. SIDE CASE(L)
401	4822 432 60384	E.V.F. SIDE CASE(R)
402	4822 532 40194	ROTARY PIECE
403	4822 492 70543	ROTARY LOCK SPRING
404	4822 520 20645	STEEL BALL
405	4822 403 53995	STEEL BALL FIX.ANGLE
406	4822 466 82627	SHIELD PLATE
407	4822 532 61172	EYESIGHT CONNEC.RING
408	4822 432 60383	EYESIGHT CONNEC.CASE
409	4822 530 51111	O RING
410	4822 532 61171	EYE CAP HOLDER
411	4822 462 71565	EYE CAP
412	4822 381 11035	E.V.F. LENS
413	4822 462 71564	E.V.F. LENS HOLDER
414	4822 321 60376	CRT SOKET UNIT
415	4822 150 10256	DY
416	4822 131 20238	CRT

417	4822 462 71644	CRT MASKING
418	4822 466 70674	LED PANEL LIGHT
419	4822 256 91602	CRT HOLDER
420	4822 532 51988	CRT RUBBER
550	4822 736 51942	OPER.INSTRUCTIONS
556	4822 321 60377	AV OUTPUT CORD
557	4822 498 20112	SHOULDER STRAP
560	4822 321 23097	DC OUTPUT CORD
	4822 397 30186	VHS-C ALIGNMENT TAPE
	4822 395 90255	Y/C SEPARATOR
	4822 395 90566	CAMERA HOLDER
	4822 432 60215	CAMERA HOLDER ARM
	4822 256 91287	HOLDER SPACER
	4822 502 13254	SCREW
	4822 397 30209	HUNT.&GRA/WHITE CHAR
	4822 397 30217	LOG.GRAYSCALE CHART
	4822 397 30216	COLOUR CHIP CHART
	4822 397 30215	COLOUR BAR CHART
	4822 397 30218	BALL CHART
	4822 397 60152	COL.TEMP.CONV.FILTER
	4822 397 60153	COL.TEMP.CONV.FILTER
	4822 397 60154	COL.TEMP.CONV.FILTER
	4822 532 40195	CLEARANCE SPACER
	4822 395 50386	ALIGNMENT SHAFT
	4822 466 70675	DIFFUSION PLATE
	4822 321 60378	EXT.CABLE (3P)
	4822 321 60379	EXT.CABLE (5P)
	4822 321 60381	EXT.CABLE (14P)
	4822 321 60384	EXTENS.CABLE(5P)
	4822 395 30279	EXTENS.CABLE(18P)
	4822 321 60382	EXTENS.CABLE(6P)
	4822 321 60385	EXTENS.CABLE(26P)
	4822 321 23178	EXTENS.CABLE(20P)
	4822 321 22747	EXTENS.CABLE(2P)
	4822 321 60383	EXTENS.CABLE(3P)
	4822 321 23181	CONNECTOR
	4822 395 40055	RETAINING RING REM.
	4822 395 50275	POST ADJ.SCREWDRIVER
	4822 395 90585	CHECK LIGHT
	4822 395 50184	HEX WRENCH SET
	4822 395 90256	HEAD CLEANING STICK
	4822 214 32917	VEP22083A AWT C.B.A.
	4822 214 32878	VEP22082E SENSOR C.B.A.
	4822 214 32919	VEP23089F PROCESS C.B.A.
	4822 214 32918	VEP23018H AUTO FOCUS C.B.A.
	4822 214 32916	VEP06644A CAMERA OPER.C.B.A.
	4822 214 32171	VEP30038A AF/ZOOM DETECT C.B.A
	4822 214 32881	VEP28022B E.V.F. C.B.A.
	4822 214 32877	VEP06643A MAIN C.B.A.
	4822 214 32874	VEP03676D LUM./CHROMIN. C.B.A
	4822 214 32873	VEP02349A DRIVE C.B.A.
	4822 214 32875	VEP05147A HEAD AMP C.B.A
	4822 214 32876	VEP06592B VTR OPER. C.B.A
	4822 214 32914	VEK4413 START/STOP SW C.B.A
	4822 214 32913	VEK3971 ZOOM SW C.B.A
	4822 214 32915	VEK4733 EARPHONE JACK C.B.A
	4822 214 32917	VEP22083A AWTC.B.A

ELECTRICAL PARTSLIST VKR6843

AWT C.B.A.

C60103	4822 122 33731	C.CAP.CH 25V 0.1 U
FP601	4822 267 50981	CONN. (FEMALE)
IC601	4822 209 61984	IC M51096AU
IC602	4822 209 71423	IC AN1358S
▭		
R601	4822 116 82266	M.RES.CH 1/10W 12K
R602	4822 116 82279	M.RES.CH 1/10W 8.2
R603	4822 116 82278	M.RES.CH 1/10W 120
R604	4822 116 81068	M.RES.CH 1/20W 2.2
R605	4822 116 81046	M.RES.CH 1/20W 1K
R606	4822 116 81047	M.RES.CH 1/20W 10K
R607	4822 116 81047	M.RES.CH 1/20W 10K
R608	4822 116 81046	M.RES.CH 1/20W 1K
R609	4822 116 81068	M.RES.CH 1/20W 2.2
R610	4822 116 81047	M.RES.CH 1/20W 10K

SENSOR C.B.A

B201	4822 265 40896	CONN. (MALE)

C201	4822 124 10782	T.CAP. 10V 10U
C202-03	4822 122 33752	C.CAP.CH 50V 15P
C204	4822 122 33775	C.CAP.CH 50V 39P
C206	4822 125 60156	TRIMMER
C207	4822 124 10782	T.CAP.10V 10U
C208	4822 124 23237	E.CAP.6.3V 22U
C209	4822 124 10787	T.CAP. 16V 10U
C210	4822 124 23243	E.CAP. 50V1U
C211	4822 122 33729	C.CAP.CH 25V 0.1U
C212	4822 124 23235	E.CAP.25V 10U
C213	4822 122 33672	C.CAP.CH 25V 0.047
C214	4822 124 41019	E.CAP. 50V 1U
C215-16	4822 122 33764	C.CAP.CH 50V 27P
C218-19	4822 122 33764	C.CAP.CH 50V 27P
C220	4822 124 10787	T.CAP.16V 10U
C221-22	4822 122 33764	C.CAP.CH 50V 27P
C223	4822 122 33787	C.CAP.CH 50V6800P
C225	4822 122 33731	C.CAP.CH 25V 0.1 U
C226	4822 124 23235	E.CAP. 25 V 10 U
C229	4822 124 41003	E.CAP.6.3 V 47 U
C230-33	4822 122 33731	C.CAP.CH 25V 0.1U
C236	4822 122 33752	C.CAP.CH 50V 15P
C237	4822 122 33731	C.CAP.CH 25V 0.1U
C238-40	4822 122 33768	C.CAP.CH 50V 33P
C241	4822 122 33744	C.CAP.CH 50V 100P
C242-43	4822 122 33731	C.CAP.CH 25V 0.1U
C244	4822 122 33672	C.CAP.CH 25V 0.047
C245	4822 122 33731	C.CAP.CH 25V 0.1 U
C246	4822 122 33752	C.CAP.CH 50V 15P
C247	4822 124 23242	E.CAP.16V 10U
C248-50	4822 122 33731	C.CAP.CH 25V 0.1U
C251	4822 122 33768	C.CAP.CH 50V 33P
C252-53	4822 122 33731	C.CAP.CH 25V 0.1U
C255	4822 124 23242	E.CAP.16V 10U
C260-61	4822 122 33748	C.CAP.CH 50V 0.01U
C262-63	4822 122 33731	C.CAP.CH 25V 0.1U
C280	4822 124 10782	T.CAP.10V 10 U
C281	4822 124 10787	T.CAP.16V 10 U
C282-83	4822 122 33757	C.CAP.CH 50V 18P
C284	4822 122 33672	C.CAP.CH 25V 0.047U
C285	4822 122 33757	C.CAP.CH 50V 18P

D202	4822 130 80732	DIODE MA728
D204-05	4822 130 80727	DIODE MA110
D207	4822 130 80727	DIODE MA110
D209	4822 130 80289	DIODE MA141WK
D210-13	4822 130 80727	DIODE MA110

Miscellanous

FL201	4822 242 72131	FILTER
FP201	4822 267 60283	CONN. (FEMALE)

IC201	4822 209 62126	IC MN53015XBX
IC202	4822 209 72843	IC UPD4167G
IC203	4822 209 61961	IC AN2012S

L201	4822 157 52301	COIL
L203-07	4822 157 52301	COIL
L210-14	4822 157 53409	COIL

Q201-03	4822 130 61084	TRANS. 2SD1819
Q204	4822 130 61079	TRANS. 2SC3930
Q205	4822 130 60864	TRANS. 2SA1610
Q206	4822 130 60872	TRANS. 2SC4176
Q207	4822 130 60864	TRANS. 2SA1610
Q208	4822 130 60872	TRANS. 2SC4176
Q209	4822 130 60864	TRANS. 2SA1610
Q210	4822 130 60872	TRANS. 2SC4176

R201	4822 116 81078	M.RES.CH 1/20W 330
R202	4822 116 81055	M.RES.CH 1/20W 150
R203	4822 116 81049	M.RES.CH 1/20W 1M
R204	4822 116 81046	M.RES.CH 1/20W 1K
R205	4822 116 81081	M.RES.CH 1/20W 33K
R206	4822 116 81063	M.RES.CH 1/20W 18K
R207	4822 116 81047	M.RES.CH 1/20W 10K
R208	4822 116 81089	M.RES.CH 1/20W 470
R209	4822 116 81092	M.RES.CH 1/20W 47K
R210-11	4822 116 81091	M.RES.CH 1/20W 4.7K
R212	4822 116 81077	M.RES.CH 1/20W 33
R216	4822 116 81047	M.RES.CH 1/20W 10K
R217	4822 116 81045	M.RES.CH 1/20W 100
R218	4822 116 81091	M.RES.CH 1/20W 4.7K
R221	4822 116 81045	M.RES.CH 1/20W 100
R222	4822 116 81053	M.RES.CH 1/20W 12K
R223-24	4822 116 81067	M.RES.CH 1/20W 220
R225-26	4822 116 81046	M.RES.CH 1/20W 1K
R227	4822 116 81074	M.RES.CH 1/20W 2.7K
R228	4822 116 81067	M.RES.CH 1/20W 220
R229	4822 116 81046	M.RES.CH 1/20W 1K
R230	4822 116 81049	M.RES.CH 1/20W 1M
R231	4822 116 81048	M.RES.CH 1/20W 100K
R232-33	4822 116 81045	M.RES.CH 1/20W 100
R234	4822 116 81074	M.RES.CH 1/20W 2.7K
R235	4822 116 81048	M.RES.CH 1/20W 100K
R236	4822 116 81072	M.RES.CH 1/20W 27
R240	4822 116 81079	M.RES.CH 1/20W 3.3K
R270	4822 111 90357	M.RES.CH 1/8W 33
VR201	4822 100 30083	V.RESISTOR 200K
VR202	4822 100 30085	V.RESISTOR 50K

CRYSTAL

X201	4822 242 72142	CRYSTAL OSCILLATOR

PROCESS C.B.A.

-•-)—

B301	4822 267 50925	CONN.
B305	4822 267 40905	CONN. (FEMALE)

-||-

C301	4822 122 33753	C.CAP. CH 50V 150P
C303-04	4822 124 10759	T.CAP.16V 1U
C305	4822 122 33746	C.CAP.CH 50V 1000P
C306	4822 122 33748	C.CAP.CH 50V 0.01U
C307	4822 122 33725	C.CAP.CH 16V1U
C308	4822 122 33748	C.CAP.CH 50V 0.01U
C309	4822 122 33785	C.CAP.CH 50V 68P
C310	4822 122 33761	C.CAP.CH 50V 22P
C311	4822 122 33725	C.CAP.CH 16V 1U
C312	4822 122 33746	C.CAP.CH 50V 1000P
C313	4822 124 10759	T.CAP.16V 1U
C314	4822 124 10787	T.CAP.16V 10U
C315	4822 122 33748	C.CAP.CH 50V 0.01U
C316-17	4822 122 33725	C.CAP.CH 16V1U
C318-19	4822 122 33748	C.CAP.CH 50V 0.01U
C320-21	4822 122 33672	C.CAP.CH 25V0.047U
C322	4822 122 33731	C.CAP.CH 25V 0.1U
C323	4822 124 11028	T.CAP. 6.3V 22U
C324	4822 122 33748	C.CAP.CH 50V 0.01U
C325	4822 124 23244	E.CAP. 50V 2.2U
C326	4822 124 23233	E.CAP. 16V 10U
C327	4822 122 33748	C.CAP.CH 50V 0.01U
C328-29	4822 122 33731	C.CAP.CH 25V 0.1U
C330	4822 124 10783	T.CAP. 10V 22 U
C331	4822 122 33672	C.CAP.CH 25V 0.047U
C332	4822 124 23243	E.CAP. 50V 1U
C333	4822 124 23245	E.CAP. 50V 3.3 U
C334	4822 122 33744	C.CAP.CH 50V 100P
C335	4822 122 33672	C.CAP.CH 25V 0.047U
C336-37	4822 122 33731	C.CAP.CH 25V 0.1U
C338-39	4822 122 33672	C.CAP.CH 25V 0.047U
C340-41	4822 122 33731	C.CAP.CH 25V 0.1U
C342	4822 122 33672	C.CAP.CH 25V 0.047U
C343	4822 122 33731	C.CAP.CH 25V 0.1U
C344	4822 122 33746	C.CAP.CH 50V 1000P
C345	4822 124 23241	E.CAP. 16V 4.7U
C348	4822 124 23242	E.CAP. 16V 10U
C349	4822 126 10619	C.CAP.CH 50V 220P
C350	4822 124 23233	E.CAP.16 V 10U
C351	4822 122 33731	C.CAP.CH 25V 0.1U
C353	4822 122 33768	C.CAP.CH 50V 33P
C354	4822 122 33671	C.CAP.CH 16V 0.22U
C355-56	4822 122 33748	C.CAP.CH 50V 0.01U
C357	4822 124 22756	E.CAP. 50V 1 U
C358	4822 124 10783	T.CAP. 10V 22U
C360	4822 122 33731	C.CAP.CH 25V 0.1U
C361	4822 124 41029	E.CAP. 16V 33U
C362	4822 122 33764	C.CAP.CH 50V 27P
C363-64	4822 122 33731	C.CAP.CH 25V 0.1U
C365	4822 124 11029	T.CAP. 6.3V 33U
C366	4822 122 33748	C.CAP.CH 50V 0.01U
C368	4822 126 10621	C.CAP.CH 50V 270P
C369	4822 124 10782	T.CAP. 10V 10U
C371	4822 124 10759	T.CAP. 16V 1U
C372	4822 124 23238	E.CAP. 6.3V 47 U
C373	4822 124 23234	E.CAP.16V 10U
C374-76	4822 122 33731	C.CAP.CH 25V 0.1U
C377	4822 122 33748	C.CAP.CH 50V 0.01U
C378	4822 122 33761	C.CAP.CH 50V 22P
C380	4822 122 33768	C.CAP.CH 50V 33P
C382	4822 122 33761	C.CAP.CH 50V 22P
C384	4822 124 23236	E.CAP.25V 4.7U
C385	4822 124 23234	E.CAP.16V 10U
C386	4822 124 23242	E.CAP.16V 10U
C387-89	4822 122 33782	C.CAP.CH 50V 56P
C393	4822 122 33788	C.CAP.CH 50V 82P
C395-96	4822 122 33725	C.CAP.CH 16V 1U
C398-00	4822 122 33748	C.CAP.CH 50V 0.01U
C401-02	4822 122 33753	C.CAP.CH 50V 150P
C416	4822 124 23232	E.CAP.4V 220U
C501	4822 124 23239	E.CAP. 10V 10U
C502-03	4822 122 33731	C.CAP.CH 25V 0.1U
C504	4822 124 23239	E.CAP. 10V 10U
C505-06	4822 122 33672	C.CAP.CH 25V 0.047U
C507	4822 124 23234	E.CAP. 16 V 10U

-▶|-

D301	4822 130 80729	DIODE MA141A
D305	4822 130 80729	DIODE MA141A
D306	4822 130 80289	DIODE MA141WK
D307	4822 130 80732	DIODE MA728
D308	4822 130 80731	DIODE MA3047M
D501	4822 130 80376	DIODE MA141WA
D502	4822 130 80732	DIODE MA728

FILTER

FL301	4822 157 62049	FILTER
FL302	4822 157 62053	FILTER
FL303	4822 242 72122	FILTER
FL304	4822 157 62048	FILTER
FL305	4822 157 62054	FILTER
FL307	4822 157 62051	FILTER
FL308	4822 157 62047	FILTER

-•-)—

FP302	4822 267 40906	CONN. (FEMALE)
FP306	4822 267 50926	CONN.

▭

IC302	4822 209 61978	IC MN3819S
IC303	4822 209 61979	IC MN3820S
IC304	4822 209 61962	IC AN2154FAP
IC308-09	4822 209 61974	IC LM2904M
IC310	4822 209 61963	IC AN2254FAP
IC311	4822 209 61981	IC MN5107
IC312	4822 209 61995	IC VCR0250
IC501	4822 209 61986	IC RZ4052BM
IC502	4822 209 72825	IC LM2902M
IC503	4822 209 61974	IC LM2904M
IC504-05	4822 209 72825	IC LM2902M

-ᴗᴗᴗ-

L301	4822 157 10212	COIL 15UH
L302	4822 157 62055	COIL 15UH
L303	4822 157 52485	COIL 100UH
L304-06	4822 157 10212	COIL 15UH
L307	4822 157 52486	COIL 33UH
L308-09	4822 157 10212	COIL 15UH
L310	4822 157 53409	COIL
L311	4822 157 10212	COIL 15 UH
L312	4822 157 52485	COIL 100UH
L313	4822 157 52486	COIL 33UH
L316	4822 157 52486	COIL 33UH

P303	4822 265 30799	CONN. (MALE)
P307	4822 265 51242	CONN. (MALE)
P308-09	4822 265 20432	CONN. (MALE)
Q301	4822 130 61084	TRANS. 2SD1819
Q302	4822 130 61081	TRANS. 2SC3931
Q303	4822 130 61075	TRANS. 2SB1218
Q304	4822 130 60667	TRANS. 2SA1532
Q305	4822 130 61072	TRANS. XN4601
Q306	4822 130 62202	TRANS. XN4401
Q308	4822 130 61072	TRANS. XN4601
Q310	4822 130 61075	TRANS. 2SB1218
Q312	4822 130 61084	TRANS. 2SD1819
Q313	4822 130 61081	TRANS. 2SC3931
Q314	4822 130 61084	TRANS. 2SD1819
Q315	4822 130 62202	TRANS. XN4401
Q317	4822 130 61084	TRANS. 2SD1819
Q320	4822 130 62202	TRANS. XN4401
Q322	4822 130 62202	TRANS. XN4401
Q324	4822 130 60667	TRANS. 2SA1532
Q328	4822 130 62203	TRANS. XN4501
Q502	4822 130 62202	TRANS. XN4401
Q503	4822 130 62203	TRANS. XN4501
Q504	4822 130 62202	TRANS. XN4401
Q505	4822 130 62203	TRANS. XN4501
Q506	4822 130 61098	TRANS. 2SD874
Q507	4822 130 61076	TRANS. 2SB1219
Q508-10	4822 130 61072	TRANS. XN4601
R301	4822 116 81046	M.RES.CH 1/20W 1K
R302	4822 116 81073	M.RES.CH 1/20W 270
R303	4822 116 81084	M.RES.CH 1/20W 390
R304	4822 116 81046	M.RES.CH 1/20W 1K
R305	4822 116 81089	M.RES.CH 1/20W 470
R306	4822 116 81068	M.RES.CH 1/20W 2.2K
R307	4822 116 81046	M.RES.CH 1/20W 1K
R308	4822 116 81062	M.RES.CH 1/20W 1.8K
R309	4822 116 81095	M.RES.CH 1/20W 560
R310	4822 116 81045	M.RES.CH 1/20W 100
R311-12	4822 116 81079	M.RES.CH 1/20W 3.3K
R313	4822 116 81091	M.RES.CH 1/20W 4.7K
R314	4822 116 81046	M.RES.CH 1/20W 1K
R315	4822 116 81062	M.RES.CH 1/20W 1.8K
R317	4822 116 81095	M.RES.CH 1/20W 560
R318	4822 116 81085	M.RES.CH 1/20W 3.9K
R319	4822 116 81046	M.RES.CH 1/20W 1K
R321	4822 116 81068	M.RES.CH 1/20W 2.2K
R322	4822 116 81046	M.RES.CH 1/20W 1K
R323	4822 116 81091	M.RES.CH 1/20W 4.7K
R324	4822 116 81068	M.RES.CH 1/20W 2.2K
R325-26	4822 116 81091	M.RES.CH 1/20W 4.7K
R327	4822 116 81046	M.RES.CH 1/20W 1K
R328	4822 116 81091	M.RES.CH 1/20W 4.7K
R329	4822 116 81063	M.RES.CH 1/20W 18K
R330	4822 116 81079	M.RES.CH 1/20W 3.3K
R331	4822 116 81096	M.RES.CH 1/20W 5.6K
R332	4822 116 81091	M.RES.CH 1/20W 4.7K
R333	4822 116 81142	M.RES.CH 1/20W 8.2K
R334	4822 116 81107	M.RES.CH 1/20W 820
R336	4822 116 81048	M.RES.CH 1/20W 100K
R337	4822 116 81058	M.RES.CH 1/20W 150K
R338	4822 116 81046	M.RES.CH 1/20W 1K
R339	4822 116 81086	M.RES.CH 1/20W 39K
R340	4822 116 81063	M.RES.CH 1/20W 18K
R341	4822 116 81057	M.RES.CH 1/20W 15K
R342	4822 116 81092	M.RES.CH 1/20W 47K
R343	4822 116 81075	M.RES.CH 1/20W 27K
R344	4822 116 81063	M.RES.CH 1/20W 18K
R345	4822 116 81081	M.RES.CH 1/20W 33K
R348	4822 116 81092	M.RES.CH 1/20W 47K
R349	4822 116 81047	M.RES.CH 1/20W 10K
R350	4822 116 81096	M.RES.CH 1/20W 5.6K
R351	4822 116 81094	M.RES.CH 1/20W 56
R352	4822 116 81048	M.RES.CH 1/20W 100K
R353	4822 116 81069	M.RES.CH 1/20W 22K
R354	4822 116 81075	M.RES.CH 1/20W 27K
R355	4822 116 81046	M.RES.CH 1/20W 1K
R357	4822 116 81075	M.RES.CH 1/20W 27K
R358	4822 116 81046	M.RES.CH 1/20W 1K
R359	4822 116 81048	M.RES.CH 1/20W 100K
R360	4822 116 81091	M.RES.CH 1/20W 4.7K
R361-62	4822 116 81081	M.RES.CH 1/20W 33K
R363	4822 116 81068	M.RES.CH 1/20W 2.2K
R364	4822 116 81091	M.RES.CH 1/20W 4.7K
R365	4822 116 81047	M.RES.CH 1/20W 10K
R366	4822 116 81046	M.RES.CH 1/20W 1K
R367	4822 116 81095	M.RES.CH 1/20W 560
R368	4822 116 81078	M.RES.CH 1/20W 330
R369-71	4822 116 81046	M.RES.CH 1/20W 1K
R374-75	4822 116 81091	M.RES.CH 1/20W 4.7K
R376	4822 116 81092	M.RES.CH 1/20W 47K
R377	4822 116 81046	M.RES.CH 1/20W 1K
R378	4822 116 81085	M.RES.CH 1/20W 3.9K
R380	4822 116 81068	M.RES.CH 1/20W 2.2K
R381	4822 116 81056	M.RES.CH 1/20W 1.5K
R382	4822 116 81075	M.RES.CH 1/20W 27K
R383	4822 116 81102	M.RES.CH 1/20W 68K
R385	4822 116 81108	M.RES.CH 1/20W 82K
R387	4822 116 81047	M.RES.CH 1/20W 10K
R388	4822 116 81062	M.RES.CH 1/20W 1.8K
R389	4822 116 81049	M.RES.CH 1/20W 1M
R390	4822 116 81053	M.RES.CH 1/20W 12K
R397	4822 116 81045	M.RES.CH 1/20W 100
R398	4822 116 81048	M.RES.CH 1/20W 100K
R399	4822 116 81097	M.RES.CH 1/20W 56K
R400	4822 116 81048	M.RES.CH 1/20W 100K
R401	4822 116 81047	M.RES.CH 1/20W 10K
R402-03	4822 116 81046	M.RES.CH 1/20W 1K
R404	4822 116 81091	M.RES.CH 1/20W 4.7K
R405	4822 116 81142	M.RES.CH 1/20W 8.2K
R406	4822 116 81099	M.RES.CH 1/20W 680
R408	4822 116 81099	M.RES.CH 1/20W 680
R409	4822 116 81047	M.RES.CH 1/20W 10K
R410	4822 116 81085	M.RES.CH 1/20W 3.9K
R411	4822 116 81046	M.RES.CH 1/20W 1K
R412	4822 116 81062	M.RES.CH1/20W 1.8K
R413	4822 116 81068	M.RES.CH1/20W 2.2K
R414	4822 116 81084	M.RES.CH1/20W 390
R415	4822 116 81047	M.RES.CH 1/20W 10K
R416	4822 116 81096	M.RES.CH1/20W 5.6K
R417	4822 116 81046	M.RES.CH1/20W 1K
R418	4822 116 81047	M.RES.CH 1/20W 10K
R419	4822 116 81056	M.RES.CH 1/20W 1.5K
R426	4822 116 81046	M.RES.CH 1/20W 1K
R427	4822 116 81091	M.RES.CH 1/20W 4.7K
R428	4822 116 81112	M.RES.CH 1/20W 0
R429	4822 116 81068	M.RES.CH 1/20W 2.2K
R431	4822 116 81069	M.RES.CH 1/20W 22K
R432	4822 116 81102	M.RES.CH 1/20W 68K
R433	4822 116 81097	M.RES.CH 1/20W 56K
R434	4822 116 81046	M.RES.CH 1/20W 1K
R435	4822 116 81047	M.RES.CH 1/20W 10K
R436	4822 116 81085	M.RES.CH 1/20W 3.9K
R437-438	4822 116 81046	M.RES.CH 1/20W 1K

R439	4822 116 81091	M.RES.CH 1/20W 4.7K
R440	4822 116 81047	M.RES.CH 1/20W 10K
R442	4822 116 81092	M.RES.CH 1/20W 47K
R443-444	4822 116 81062	M.RES.CH 1/20W 1.8K
R445-47	4822 116 81068	M.RES.CH 1/20W 2.2K
R449	4822 116 81085	M.RES.CH 1/20W 3.9K
R450	4822 116 81053	M.RES.CH 1/20W 12K
R451	4822 116 81108	M.RES.CH 1/20W 82K
R452	4822 116 81053	M.RES.CH 1/20W 12K
R456-57	4822 116 81057	M.RES.CH 1/20W 15K
R458	4822 116 81062	M.RES.CH 1/20W 1.8K
R459	4822 116 81085	M.RES.CH 1/20W 3.9K
R460	4822 116 81067	M.RES.CH 1/20W 220
R461	4822 116 81089	M.RES.CH 1/20W 470
R462	4822 116 81046	M.RES.CH 1/20W 1K
R463	4822 116 81085	M.RES.CH 1/20W 3.9K
R465	4822 116 81099	M.RES.CH 1/20W 680
R501-02	4822 116 81101	M.RES.CH 1/20W 6.8K
R503-04	4822 116 81048	M.RES.CH 1/20W 100K
R505	4822 116 81082	M.RES.CH 1/20W 330K
R506-07	4822 116 81047	M.RES.CH 1/20W 10K
R508	4822 116 81048	M.RES.CH 1/20W 100K
R509	4822 116 81071	M.RES.CH 1/20W 220K
R510	4822 116 81058	M.RES.CH 1/20W 150K
R511	4822 116 81071	M.RES.CH 1/20W 220K
R512-13	4822 116 81047	M.RES.CH 1/20W 10K
R514-15	4822 116 81048	M.RES.CH 1/20W 100K
R516	4822 116 81082	M.RES.CH 1/20W 330K
R517	4822 116 81046	M.RES.CH 1/20W 1K
R518	4822 116 82273	M.RES.CH 3W 10M
R519	4822 116 81097	M.RES.CH 1/20W 56K
R520	4822 116 81076	M.RES.CH 1/20W 270K
R521	4822 116 81082	M.RES.CH 1/20W 330K
R522	4822 116 82274	M.RES.CH 3W 3.3M
R523	4822 116 82271	M.RES.CH 1/20W 56K
R524	4822 116 82272	M.RES.CH 1/20W 560K
R525	4822 116 82269	M.RES.CH 1/20W 1K
R526	4822 116 82273	M.RES.CH 3W 10M
R527	4822 116 81097	M.RES.CH 1/20W 56K
R528	4822 116 81076	M.RES.CH 1/20W 270K
R529	4822 116 81082	M.RES.CH 1/20W 330K
R530	4822 116 82274	M.RES.CH 3W 3.3M
R531	4822 116 81097	M.RES.CH 1/20W 56K
R532	4822 116 81098	M.RES.CH 1/20W 560K
R533	4822 116 81048	M.RES.CH 1/20W 100K
R534-36	4822 116 81047	M.RES.CH 1/20W 10K
R537	4822 116 81071	M.RES.CH 1/20W 220K
R538	4822 116 81058	M.RES.CH 1/20W 150K
R539	4822 116 81108	M.RES.CH 1/20W 82K
R540-41	4822 116 81047	M.RES.CH 1/20W 10K
R542	4822 116 81071	M.RES.CH 1/20W 220K
R543	4822 116 81047	M.RES.CH 1/20W 10K
R544-53	4822 116 81081	M.RES.CH 1/20W 33K
R554-56	4822 116 81047	M.RES.CH 1/20W 10K
R557	4822 116 81048	M.RES.CH 1/20W 100K
R558	4822 116 81046	M.RES.CH 1/20W 1K
R559	4822 116 81048	M.RES.CH 1/20W 100K
R560	4822 116 81096	M.RES.CH 1/20W 5.6K
R561-62	4822 116 81046	M.RES.CH 1/20W 1K
R563-64	4822 116 81096	M.RES.CH 1/20W 5.6K
R565	4822 116 81062	M.RES.CH 1/20W 1.8K
R569-71	4822 116 81047	M.RES.CH 1/20W 10K
R572	4822 116 81046	M.RES.CH 1/20W 1K
R574-75	4822 116 81048	M.RES.CH 1/20W 100K
R576	4822 116 81068	M.RES.CH 1/20W 2.2K
R577-79	4822 116 81046	M.RES.CH 1/20W 1K
R580	4822 116 81048	M.RES.CH 1/20W 100K
R581	4822 116 81068	M.RES.CH 1/20W 2.2K
R582	4822 116 81048	M.RES.CH 1/20W 100K
R583	4822 116 81046	M.RES.CH 1/20W 1K
R584	4822 116 81112	M.RES.CH 1/20W 0
R585	4822 116 81047	M.RES.CH 1/20W 10K
TH301	4822 116 40189	THERMISTOR
VR301	4822 100 30081	V.RESISTOR 10K
VR303	4822 100 30082	V.RESISTOR 20K
VR304	4822 100 30085	V.RESISTOR 50K
VR305-07	4822 100 30082	V.RESISTOR 20K
VR309-10	4822 100 30082	V.RESISTOR 20K
VR311-12	4822 100 30081	V.RESISTOR 10K
VR313-15	4822 100 30079	V.RESISTOR1K
VR317-20	4822 100 30084	V.RESISTOR5K
VR324	4822 100 30081	V.RESISTOR 10K
VR327	4822 100 30081	V.RESISTOR 10K
VR328	4822 100 30082	V.RESISTOR 20K
VR329	4822 100 30081	V.RESISTOR 10K
VR523	4822 100 30085	V.RESISTOR 50K
VR525-26	4822 100 30082	V.RESISTOR 20K
VR527	4822 100 30085	V.RESISTOR 50K
VR528-29	4822 100 30081	V.RESISTOR 10K
VR530-31	4822 100 30085	V.RESISTOR 50K

AUTO FOCUS C.B.A.

—●

B701	4822 265 41018	CONN. (MALE)

⊣⊢

C701	4822 124 23246	E.CAP.6.3V 470U
C702	4822 122 33764	C.CAP.CH 50V 27P
C703	4822 125 60142	TRIMER
C706	4822 122 33744	C.CAP.CH 50V 100P
C710-11	4822 122 33736	C.CAP.CH 25V0.047U
C712	4822 124 40997	E.CAP.6.3V 100U
C713	4822 122 33731	C.CAP.CH 25V 0.1U
C714	4822 124 40997	E.CAP.6.3V 100 U
C715	4822 124 10782	T.CAP. 10V10 U
C716-19	4822 124 23234	E.CAP. 16V10 U
C720	4822 124 22744	E.CAP. 6.3V 22 U
C721	4822 122 33672	C.CAP.CH 25V 0.047U
C722-24	4822 122 33735	C.CAP.CH 25V 0.027U
C725	4822 122 33738	C.CAP.CH 25V 0.063U
C726	4822 122 33731	C.CAP.CH 25V0.1 U
C727-29	4822 122 33671	C.CAP.CH 16V 0.22 U
C730	4822 122 33768	C.CAP.CH 50V 33P
C731	4822 122 33672	C.CAP.CH 25V0.047U
C732-35	4822 122 33748	C.CAP.CH 50V 0.01U
C736	4822 122 33762	C.CAP.CH 50V 220P
C737	4822 125 60142	TRIMER
C738-39	4822 122 33671	C.CAP.CH 16V 0.22U
C740-41	4822 124 23234	E.CAP. 16V 10U
C742	4822 124 22759	E.CAP. 50V1U
C743	4822 122 33731	C.CAP.CH 25V 0.1U
C744-45	4822 124 41003	E.CAP. 6.3V 47U
C746	4822 122 33748	C.CAP.CH 50V 0.01U
C747	4822 122 33731	C.CAP.CH 25V 0.01U
C748	4822 124 21668	E.CAP. 16V 10U
C749-50	4822 122 33731	C.CAP.CH 25V 0.1U
C755	4822 122 33731	C.CAP.CH 25V 0.1U

→|—

D701-02	4822 130 80729	MA141A DIODE
D703-04.	4822 130 80733	1SS250 DIODE

FILTER

FL701	4822 242 72123	ELB4B004 FILTER
FL702	4822 242 72135	VLF0595 FILTER
FL703	4822 242 72124	ELB4B005 FILTER
FL704	4822 242 72127	ELB4D001 FILTER
FL705	4822 242 72136	VLF0596 FILTER

▭

IC701	4822 209 61977	MN15867VNY IC
IC702	4822 209 61965	AN2584NFAP IC
IC703	4822 209 61985	NJM4558MP IC
IC704	4822 209 82512	AN78N05 IC
IC705	4822 209 71449	NJM3415M IC
IC706	4822 209 61971	AN6663SP IC

—∿∿—

L701	4822 157 53668	COIL 56UH
L702	4822 157 51975	COIL 100UH
L703	4822 157 52084	COIL 33UH
L704	4822 157 51991	COIL 15UH

—●

P701	4822 265 30726	CONN. (MALE) 6P
P703	4822 265 30726	CONN. (MALE) 6P
P704	4822 265 30724	CONN. (MALE) 3P
P705	4822 265 41017	CONN. (MALE)10P

⊗

Q701-02	4822 111 91224	LOGIC TRANS. UN2211
Q703	4822 130 42662	CHIP TRANS. 2SB710
Q704	4822 130 61073	TRANS. 2SA1255
Q705	4822 130 61078	TRANS. 2SC3138
Q706-07	4822 130 61084	TRANS. 2SD1819
Q710	4822 130 61064	TRANS. XN1212
Q711	4822 130 62203	TRANS. XN4501

—▭—

R701	4822 116 81066	M.RES.CH 1/20W 22
R702-03	4822 116 81097	M.RES.CH 1/20W 56K
R704-06	4822 116 82277	M.RES.CH 3W10K
R707-08	4822 116 81097	M.RES.CH 1/20W 56K
R709	4822 116 81046	M.RES.CH 3W1K
R710-13	4822 116 81048	M.RES.CH 3W 100K
R715-16	4822 116 81048	M.RES.CH 3W 100K
R717	4822 116 81069	M.RES.CH 3W22K
R718	4822 116 81058	M.RES.CH 3W 150K
R720	4822 116 81046	M.RES.CH 3W 1K
R721	4822 116 81053	M.RES.CH 3W12K
R722	4822 116 81046	M.RES.CH 3W 1K
R723	4822 116 81053	M.RES.CH 1/20W 12K
R724-25	4822 116 81069	M.RES.CH 1/20W 22K
R726	4822 116 81054	M.RES.CH 1/20W 120K
R727	4822 116 81063	M.RES.CH 1/20W 18K
R728	4822 116 81108	M.RES.CH 1/20W 82K
R729	4822 116 81087	M.RES.CH 1/20W 390K
R730	4822 116 81093	M.RES.CH 1/20W 470K
R731	4822 116 81047	M.RES.CH 1/ 3W 10K
R732	4822 116 82276	M.RES.CH 1/ 3W8.2K
R733	4822 116 82275	M.RES.CH 3W 4.7K
R734-38	4822 116 81046	M.RES.CH 3W 1K
R739	4822 116 81108	M.RES.CH 1/20W 82K
R740	4822 116 81079	M.RES.CH 1/20W 3.3K
R741	4822 116 81047	M.RES.CH 3W 10K
R742	4822 116 81046	M.RES.CH 3W1K
R743	4822 116 81091	M.RES.CH 1/20W 4.7K
R744	4822 116 81047	M.RES.CH 3W 10K
R745	4822 116 81044	M.RES.CH 3W 10K
R746	4822 116 81075	M.RES.CH 1/20W 27K
R747	4822 116 81048	M.RES.CH 3W 100K
R748-49	4822 116 81076	M.RES.CH 1/20W 270K
R750	4822 116 81046	M.RES.CH 3W 1K
R751	4822 116 81071	M.RES.CH 1/20W 220K
R752	4822 116 81075	M.RES.CH 1/20W 27K
R759	4822 116 81068	M.RES.CH 1/20W 2.2K
R760	4822 116 81088	M.RES.CH 1/10W 47

TRANSFORMER

T701	4822 148 60188	TRANSFORMER

—▭—

VR701	4822 100 11283	V.RESISTOR 5K
VR702	4822 100 11282	V.RESISTOR 100K
VR703	4822 100 30081	V.RESISTOR 10K

CRYSTAL

X701	4822 242 73545	CRYSTAL OSCILLATOR

CAMERA OPERATION C.B.A.

⊣⊢

C6801-02	4822 124 41003	E.CAP.6.3V 47U

▶|

D6801-02	4822 130 32362	MA165 DIODE

•–

FP6801	4822 267 50933	VJS2282 CONN.
P6801	4822 265 41021	VJP1611T CONN. (MALE)
P6802	4822 265 51242	VJP1607T CONN. (MALE)

⊗

Q6801	4822 130 41605	2SD636 TRANS. L(Q-R-S)
Q6802	4822 130 42251	2SB641 TRANS. L(Q-R-S)
Q6803	4822 130 41605	2SD636 TRANS. (Q-R-S)

▭

R6803	4822 116 52251	C.RES. 1/4W 18K
R6804	4822 116 52239	C.RES. 1/4W 120K
R6805	4822 116 52245	C.RES. 1/4W 150K
R6808	4822 116 52303	C.RES. 1/4W 8.2K
R6831	4822 116 52204	C.RES. 1/4W 1K
R6832	4822 116 52278	C.RES. 1/4W 390K
R6833	4822 116 52244	C.RES. 1/4W15K
R6834	4822 116 52271	C.RES. 1/4W33K
R6835	4822 116 52257	C.RES. 1/4W22K
R6836	4822 116 52244	C.RES. 1/4W15K
R6837	4822 116 52277	C.RES. 1/4W39K

SWITCH

SW6802-04	4822 276 12403	SWITCH
SW6806	4822 277 21281	SWITCH
SW6807	4822 277 21381	SWITCH

AF ZOOM DETECT C.B.A

▭

4822 116 52222	C.RES.1/4W 390

▭

4822 209 71452	ON2170 IC

•–

4822 265 30801	CONN.(MALE)

E.V.F. C.B.A.

C801	4822 126 10689	C.CAP.CH 25V 0.1U
C802	4822 124 23247	E.CAP.16V 100U
C803	4822 122 33744	C.CAP.CH 50V 100P
C804	4822 122 33671	C.CAP.CH 16V0.22U
C805	4822 124 23247	E.CAP.16V 100U
C806	5322 122 32654	C.CAP.CH 25V0.023U
C807	4822 124 41019	E.CAP. 50V 1U
C808	4822 126 10687	C.CAP.CH 16V 1U
C809	4822 124 22746	E.CAP.10V 47U
C810	4822 121 43633	P.CAP.100V 3000P
C811	4822 124 23247	E.CAP. 16V 100U
C812	4822 122 33744	C.CAP.CH 50V 100P
C813	4822 121 90056	S.CAP. 1KV 150P
C814	4822 124 41019	E.CAP. 50V 1U
C815	4822 126 10149	S.CAP.500V 330P
C816	4822 122 33749	C.CAP.CH 50V 0.1U

D801	4822 130 80526	MA141K DIODE
D802	4822 130 82019	SFPL-52 DIODE
D803	4822 130 80165	ERA34-10 DIODE
D861	4822 130 82018	BR1102W DIODE

IC801	4822 209 61964	AN2514 IC

L801	4822 157 62154	COIL 39UH
L802	4822 157 62148	COIL

P801	4822 265 30726	CONN. (MALE)
P802	4822 265 30725	CONN. (MALE)
P803	4822 265 30428	CONN. (MALE)
P804	4822 265 30724	CONN. (MALE)

Q801	4822 130 61075	TRANS. 2SB1218
Q802	4822 130 61087	TRANS. 2SD968A
Q803	4822 130 60667	TRANS. 2SA1532

R801	4822 116 82368	M.RES.CH 1/10W 39K
R802	4822 116 82346	M.RES.CH 1/10W 3.9
R805	4822 116 81046	M.RES.CH 1/20W 1K
R806	4822 116 81049	M.RES.CH 1/20W 1M
R807	4822 116 81111	M.RES.CH 1/20W 6.8
R808	4822 116 81074	M.RES.CH 1/20W 2.7K
R809	4822 116 81093	M.RES.CH 1/20W 470K
R810	4822 116 81048	M.RES.CH 1/20W 100K
R811-12	4822 116 81046	M.RES.CH 1/20W 1K
R813	4822 116 81084	M.RES.CH 1/20W 390
R814	4822 116 81068	M.RES.CH 1/20W 2.2K
R815	4822 116 81056	M.RES.CH 1/20W 1.5K
R816	4822 116 81091	M.RES.CH 1/20W 4.7K
R817	4822 116 81756	M.RES.CH 1/20W 2.4K
R818	4822 116 81057	M.RES.CH 1/20W 15K
R819-21	4822 116 82369	M.RES.CH 1/10W3.3M
R825	4822 252 51018	IC PROTECTOR 0.35
R861	4822 116 81073	M.RES.CH 1/10W 270

Miscellanous

T801	4822 148 81071	F.B.T.

VR801	4822 100 30091	V.RESISTOR 220
VR802	4822 100 30094	V.RESISTOR 30K
VR803	4822 100 30088	V.RESISTOR 5.6M
VR804	4822 100 30087	V.RESISTOR 2.2M

MAIN C.B.A.

─┤├─

C1001	4822 126 10696	C.CAP.CH 50V 150P
C1002	4822 122 33778	C.CAP.CH 50V 470P
C1003	4822 122 33754	C.CAP.CH 50V 150P
C1004	4822 124 22756	E.CAP. 50V1U
C1005	4822 122 33726	C.CAP.CH 16V 0.47U
C1006	4822 122 33779	C.CAP.CH 50V 4700P
C1008	4822 126 10691	C.CAP.CH 16V 0.1U
C1011	4822 124 23259	E.CAP. 16V 330U
C1015	4822 124 23252	E.CAP. 5.5V 470U
C1016	4822 124 23251	E.CAP. 5.5V 220U
C1017	4822 126 10695	C.CAP.CH 50V 0.01U
C1019	4822 124 23248	E.CAP. 6V 120 U
C1020	4822 124 23251	E.CAP.5.5V 220U
C1021	4822 124 40997	E.CAP.6.3V 100U
C1022	4822 126 10691	C.CAP.CH 16V 0.1U
C1023	4822 124 23254	E.CAP. 10V 100U
C1024-25	4822 124 23247	E.CAP.16V 100U
C1026	4822 126 10701	C.CAP.CH 50V 8200P
C1027	4822 122 33767	C.CAP.CH 50V 2700U
C1030-31	4822 124 41015	E.CAP.25V 4.7U
C1032	4822 124 23254	E.CAP.10V 100U
C1033	4822 124 23258	E.CAP.16V82U
C1034-35	4822 124 41006	E.CAP.10V33U
C1036	4822 126 10691	C.CAP.CH 16V 0.1U
C1037	4822 124 23261	E.CAP.50V 0.47U
C1038	4822 124 41007	E.CAP.16V 10U
C1039	4822 126 10687	C.CAP.CH 16V 1U
C2001-02	4822 122 33744	C.CAP.CH 50V 100P
C2003	4822 122 33748	C.CAP.CH 50V0.01U
C2004	4822 126 10692	C.CAP.CH 16V0.047U
C2005	4822 124 23027	E.CAP.6.3V 47U
C2006	4822 124 41003	E.CAP.6.3V 47U
C2007	4822 122 33779	C.CAP.CH 50V 4700P
C2008	4822 122 33744	C.CAP.CH 50V100P
C2009-10	4822 124 40998	E.CAP. 6.3V 22U
C2011	4822 126 10692	C.CAP.CH 16V 0.047U
C2012	4822 122 33746	C.CAP.CH 50V 1000P
C2013	4822 122 33778	C.CAP.CH 50V470P
C2014	4822 124 41021	E.CAP. 35V 2.2U
C2015-16	4822 122 33725	C.CAP.CH 16V 1U
C2017-18	4822 122 33746	C.CAP.CH 50V 1000P
C2019	4822 124 22747	E.CAP. 10V 33U
C2020	4822 122 33788	C.CAP.CH 50V 82P
C2021-22	4822 122 33725	C.CAP.CH 16V1U
C2023	4822 126 10697	C.CAP.CH 50V 0.018U
C2024	4822 124 41007	E.CAP. 16V 10U
C2025-26	4822 124 22739	E.CAP.6.3V 100U
C2027	4822 122 33779	C.CAP.CH 50V 4700P
C2028	4822 122 33725	C.CAP.CH 16V 1U
C2029	4822 122 33746	C.CAP.CH 50V 1000P
C2030	4822 126 10691	C.CAP.CH 16V 0.1U
C2031	4822 122 33726	C.CAP.CH 16V 0.47U
C2032	4822 122 33748	C.CAP.CH 50V 0.01U
C2033	4822 122 33725	C.CAP.CH 16V1U
C2034	4822 122 33744	C.CAP.CH 50V 100P
C2035	4822 122 33746	C.CAP.CH 50V 1000P
C2036	4822 126 10691	C.CAP.CH 16V0.1U
C2037	4822 124 40997	E.CAP. 6.3V 100U
C2038-39	4822 124 41006	E.CAP.10V 33U
C2040	4822 122 33748	C.CAP.CH 50V 0.01U
C2041	4822 122 33725	C.CAP.CH 16V1U
C2043	4822 124 41007	E.CAP. 16V 10U
C2044	4822 126 10691	C.CAP.CH 16V0.1U
C2045	4822 121 42167	P.CAP. 50V 0.039U
C2046	4822 122 33748	C.CAP.CH 50V 0.01U
C2047	4822 122 33725	C.CAP.CH 16V1U
C2048-49	4822 122 33752	C.CAP.CH 50V 15P
C2051	4822 122 33726	C.CAP.CH 16V 0.47U
C2053	4822 124 23027	E.CAP.6.3V 47U
C2055	4822 124 41007	E.CAP. 16V 10U
C2056	4822 124 23027	E.CAP. 6.3V 47U
C2060	4822 126 10691	C.CAP.CH 16V 0.1U
C2061	4822 122 33731	C.CAP.CH 25V 0.1U
C2062	4822 122 33748	C.CAP.CH 50V 0.01U
C3501	4822 124 22749	E.CAP. 10V 100U
C3502.03	4822 122 33748	C.CAP.CH 50V 0.01U
C3511	4822 126 10694	C.CAP.CH 50V 0.01U
C4001	4822 124 23255	E.CAP.16V100U
C4002	4822 126 10694	C.CAP.CH 50V 0.01U
C4003	4822 124 22739	E.CAP. 6.3V 100U
C4005	4822 124 23027	E.CAP. 6.3V47U
C4006	5322 122 31866	C.CAP.CH 50V 6800P
C4007	4822 124 40998	E.CAP. 6.3V22U
C4009	4822 122 33756	C.CAP.CH 50V 0.015U
C4010	4822 124 22756	E.CAP.50V 1U
C4011	4822 122 33776	C.CAP.CH 50V 390P
C4013	4822 122 33754	C.CAP.CH 50V 150P
C4014	4822 124 22747	E.CAP.10V 33U
C4015	4822 126 10693	C.CAP.CH 25V 0.033U
C4017	4822 124 22759	E.CAP.50V 1U
C4018	4822 124 40998	E.CAP.6.3V 22U
C4019	4822 124 22756	E.CAP. 50V1U
C4020	4822 124 41015	E.CAP. 25V 4.7U
C4021	4822 124 41014	E.CAP. 25V 3.3U
C4022	4822 124 22759	E.CAP. 50V 1U
C4023	4822 126 10694	C.CAP.CH 50V 0.01U
C4024	4822 124 22739	E.CAP.6.3V 100U
C4025	5322 126 10223	C.CAP.CH 50V 4700P
C4026	4822 122 33756	C.CAP.CH 50V 0.015U
C4027	4822 124 22747	E.CAP.10V33U
C4028	4822 121 42397	P.CAP. 16V
C4029	4822 122 33738	C.CAP.CH 25V 0.063U
C4030	4822 124 23256	E.CAP. 16V 47U
C4031	4822 122 33779	C.CAP.CH 50V 4700P
C4032	4822 126 10145	C.CAP.CH 50V 1200P
C4033	4822 122 32233	C.CAP.50V150P
C4034	4822 126 10698	C.CAP.CH 50V 0.068U
C6001	4822 126 10691	C.CAP.CH 16V 0.1U
C6002	4822 124 22742	E.CAP.6.3V 150U
C6003	4822 125 60143	V.CAPACITOR
C6004	4822 122 33768	C.CAP.CH 50V 33P
C6005	4822 126 10695	C.CAP.CH 50V 0.01U
C6006	4822 124 41003	E.CAP. 6.3V 47U
C6007-08	4822 126 10691	C.CAP.CH 16V 0.1U
C6009-10	4822 126 10695	C.CAP.CH 50V 0.01U
C6011	4822 124 41007	E.CAP.16V 10U
C6012	4822 126 10691	C.CAP.CH 16V 0.1U
C6013-14	4822 124 40998	E.CAP.6.3V 22U
C6015	4822 124 41006	E.CAP. 10V 33U
C6016	4822 124 23257	E.CAP. 16V 47U
C6017-20	4822 126 10691	C.CAP.CH 16V 0.1U
C6021	4822 121 43234	C.CAP.CH 50V 0.1U

─▶|─

D1001	4822 130 82025	DIODE MA738
D1002	4822 130 80728	DIODE MA121
D1003	4822 130 82024	DIODE MA736
D1004	4822 130 82026	DIODE SFPB-59
D1005	4822 130 82024	DIODE MA736

D1006	4822 130 80729	DIODE MA141A
D1007	4822 130 80522	DIODE DAP202U
D1008	4822 130 80526	DIODE MA141K
D1009	4822 130 80177	DIODE MA3075H
D1011-12	4822 130 82024	DIODE MA736
D1013	4822 130 80526	DIODE MA141K
D2001-04	4822 130 80523	DIODE DA204U
D2006-07	4822 130 80375	DIODE DAN202U
D2009	4822 130 80526	DIODE MA141K
D2010	4822 130 80729	DIODE MA141A
D2011	4822 130 80526	DIODE MA141K
D2013-14	4822 130 80526	DIODE MA141K
D3501	4822 130 80375	DIODE DAN202U
D4001	4822 130 80526	DIODE MA141K
D6001	4822 130 80526	DIODE MA141K
D6002	4822 130 80729	DIODE MA141A
D6004	4822 130 80173	DIODE MA159
D6007	4822 130 80522	DIODE DAP202U
D6008-09	4822 130 80375	DIODE DAN202U
D6010	4822 130 80526	DIODE MA141K
D6012	4822 130 80526	DIODE MA141K
D6013-14	4822 130 80522	DIODE DAP202U
D6015	4822 130 80526	DIODE MA141K
D6016	4822 130 80729	DIODE MA141A
D6017	4822 130 80522	DIODE DAP202U
D6018	4822 130 80523	DIODE DA204U
D6020	4822 130 80729	DIODE MA141A
D6021	4822 130 80522	DIODE DAP202U
D6022	4822 130 32871	DIODE MA3056
D6024	4822 130 80526	DIODE MA141K

IC1001	4822 209 61989	TL1453CNS
IC1003	4822 209 71448	LM2903M
IC1005	4822 209 61974	LM2904M
IC2001	4822 209 72834	MN67461VDJF
IC2002	4822 209 61968	AN3798NS
IC2003	4822 209 61976	MN1551VSSFS
IC4001	4822 209 61992	UPC2309GS
IC6001	4822 209 61994	UPD75108GJ64
IC6002	4822 209 73822	S81250HGRD
IC6003	4822 209 61993	UPD6145G617A
IC6004	4822 209 61987	S3500A2
IC6005	4822 209 71926	M54543ASL
IC6006	4822 209 61975	MN12821Q
IC6007	4822 209 72842	UPD4094BG
IC6008	4822 209 71448	LM2903M

Miscellanous

J1001	4822 267 31011	DC JACK
J1002	4822 267 31169	JACK UNIT

L1001	4822 157 62145	COIL 33UH
L1002	4822 157 62147	COIL 180 UH
L1003	4822 157 62146	COIL 300 UH
L1004	4822 157 53417	COIL 600 UH
L1005	4822 157 62145	COIL 33 UH
L1006	4822 157 53448	COIL 33 UH
L1007	4822 157 62152	COIL 100 UH
L1008	4822 157 62153	COIL 220 UH
L1009	4822 157 53842	COIL 120 UH
L1010	4822 157 62153	COIL 220 UH
L1011	4822 157 53448	COIL 33 UH
L4001	4822 157 52162	COIL 100 UH
L4002	4822 157 52307	COIL 8200 UH
L4003	4822 157 62151	COIL 15 MH
L4004	4822 157 52162	COIL 100 UH
L6001	4822 157 52486	COIL 33 UH
L6002	4822 157 62149	COIL 200 UH

P1001	4822 265 51242	CONN. (MALE)
P1002	4822 267 50926	CONN. (FEMALE)
P2001	4822 267 60285	CONN. (FEMALE)
P3501	4822 265 51243	CONN. (MALE)
P3502	4822 267 60284	CONN. (FEMALE)
P4001	4822 265 51242	CONN. (MALE)
P4002	4822 265 41021	CONN. (MALE)
P4003	4822 265 30729	CONN. (MALE)
P4004	4822 265 30803	CONN. (MALE)
P6001	4822 265 20432	CONN. (MALE)
P6003	4822 267 50984	CONN. (FEMALE)
P6004	4822 267 50525	CONN. (MALE)
P6005	4822 265 30731	CONN. (MALE)
P6009	4822 265 20433	CONN. (MALE)
P6012	4822 265 41023	CONN. (MALE)

Q1001-02	4822 130 60564	TRANS. 2SB956
Q1003	4822 209 83363	TRANS. FMW1
Q1004	4822 130 60564	TRANS. 2SB956
Q1005	4822 130 62233	TRANS. 2SD2177S
Q1006-07	4822 130 42734	TRANS. 2SB798
Q1008	4822 130 61084	TRANS. 2SD1819
Q1009	4822 130 61075	TRANS. 2SB1218
Q1010-11	4822 130 60564	TRANS. 2SB956X
Q2001	4822 130 61084	TRANS. 2SD1819
Q3502-03	4822 130 42664	TRANS. 2SB970X
Q3508	4822 209 83362	TRANS. FMS1
Q4001	4822 130 61085	TRANS. 2SD1820
Q4002	4822 130 61076	TRANS. 2SB1219
Q4003	4822 130 42668	TRANS. 2SD1328 CHIP
Q4004	4822 130 61084	TRANS. 2SD1819
Q4006	4822 130 61075	TRANS. 2SB1218
Q6003	4822 130 62232	TRANS. XN4608X
Q6005-08	4822 130 61084	TRANS. 2SD1819
Q6009	4822 130 61075	TRANS. 2SB1218

Digital transistor

QR1001	4822 130 62231	LOGIC TRANS. XN4111
QR1002	4822 130 61053	LOGIC TRANS. GA1L4M
QR1003	4822 130 62227	LOGIC TRANS. GN1L4L
QR1005	4822 130 62229	LOGIC TRANS. IMD2
QR1006	4822 130 61053	LOGIC TRANS. GA1L4M
QR2003	4822 130 61053	LOGIC TRANS. GA1L4M
QR2004-05	4822 130 61285	LOGIC TRANS. GN1F4Z
QR2006	4822 130 62235	LOGIC TRANS. GA1L4Z
QR2006	4822 130 62235	LOGIC TRANS. GA1L4Z
QR2007	4822 130 61053	LOGIC TRANS. GA1L4M
QR3501	4822 130 60858	LOGIC TRANS. FMG1
QR3511	4822 130 60858	LOGIC TRANS. FMG1
QR4002	4822 130 61052	LOGIC TRANS. GA1F4M
QR6001-04	4822 130 61283	LOGIC TRANS. GA1F4Z
QR6005	4822 130 61055	LOGIC TRANS. GN1L4M
QR6006	4822 130 61054	LOGIC TRANS. GN1A4Z
QR6007	4822 130 61283	LOGIC TRANS. GA1F4Z
QR6008	4822 130 61053	LOGIC TRANS. GA1L4M
QR6009	4822 130 61071	LOGIC TRANS. XN4316
QR6010-11	4822 130 61283	LOGIC TRANS. GA1F4Z
QR6015	4822 130 61284	LOGIC TRANS. GN1F4M
QR6016	4822 130 61052	LOGIC TRANS. GA1F4M
QR6017	4822 130 62226	LOGIC TRANS. GA1L4L
QR6022	4822 130 61283	LOGIC TRANS. GA1F4Z
QR6026	4822 130 61283	LOGIC TRANS. GA1F4Z

R1001	4822 116 82365	M.RES.CH 1/10W 39K
R1002	4822 116 81046	M.RES.CH 1/20W 1K
R1003	4822 116 81054	M.RES.CH 1/20W 120K
R1004	4822 111 90171	M.RES.CH 1/8W 820
R1005	4822 116 81084	M.RES.CH 1/20W 390
R1006	4822 116 81075	M.RES.CH 1/20W 27K
R1007	4822 116 81057	M.RES.CH 1/20W 15K
R1008	4822 116 81049	M.RES.CH 1/20W 1M
R1009	4822 116 81101	M.RES.CH 1/20W 6.8K
R1010	4822 116 81046	M.RES.CH 1/20W 1K
R1011-12	4822 116 81062	M.RES.CH 1/20W 1.8K
R1015	4822 116 82362	M.RES.CH 1/8W 820
R1017	4822 116 81084	M.RES.CH 1/20W 390
R1019	4822 116 81084	M.RES.CH 1/20W 390
R1020	4822 111 90162	M.RES.CH 1/8W 680
R1021	4822 116 81084	M.RES.CH 1/20W 390
R1023	4822 116 81049	M.RES.CH 1/20W 1M
R1024	4822 116 81082	M.RES.CH 1/20W 330K
R1025	4822 116 81142	M.RES.CH 1/20W 8.2K
R1026	4822 116 81068	M.RES.CH 1/20W 2.2K
R1027	4822 116 81048	M.RES.CH 1/20W 100K
R1028	4822 116 81107	M.RES.CH 1/20W 820
R1029-30	4822 111 91516	M.RES.CH 1/10W1K
R1031	4822 116 82351	M.RES.CH 1/10W1.2K
R1032	4822 116 82352	M.RES.CH 1/10W 15K
R1033	4822 116 82355	M.RES.CH 1/10W 27K
R1034	4822 116 82347	M.RES.CH 1/10W150K
R1035	4822 116 81047	M.RES.CH 1/20W 10K
R1036	4822 116 81095	M.RES.CH 1/20W 560
R1037	4822 111 90357	M.RES.CH 1/8W 33
R1038	4822 116 81048	M.RES.CH 1/20W 100K
R1039	4822 111 90239	M.RES.CH 1/8W 56
R1040	4822 116 81049	M.RES.CH 1/20W 1M
R1041	4822 116 81064	M.RES.CH 1/20W 180K
R1042	4822 116 81091	M.RES.CH 1/20W 4.7K
R1043	4822 116 81095	M.RES.CH 1/20W 560
R1044-45	4822 116 81048	M.RES.CH 1/20W 100K
R1048	4822 116 81048	M.RES.CH 1/20W 100K
R1049	4822 116 81092	M.RES.CH 1/20W 47K
R1050	4822 116 82349	M.RES.CH 1/10W1M
R1051	4822 116 81069	M.RES.CH 1/20W 22K
R1052-54	4822 116 81047	M.RES.CH 1/20W 10K
R1055	4822 116 81053	M.RES.CH 1/20W 12K
R1056	4822 116 81069	M.RES.CH 1/20W 22K
R1057-58	4822 116 81047	M.RES.CH 1/20W 10K
R1059	4822 116 81053	M.RES.CH 1/20W 12K
R1060	4822 116 81086	M.RES.CH 1/20W 39K
R1061	4822 116 81092	M.RES.CH 1/20W 47K
R1062	4822 116 81112	M.RES.CH 1/20W 0
R1064	4822 116 81573	M.RES.CH 1/10W0
R1065	4822 116 81047	M.RES.CH 1/20W 10K
R1071	4822 252 20204	FUSE
R1072	4822 252 20251	FUSE
R2001-02	4822 116 81046	M.RES.CH 1/20W 1K
R2003	4822 116 81085	M.RES.CH 1/20W 3.9K
R2004	4822 116 81081	M.RES.CH 1/20W 33K
R2005-06	4822 116 81048	M.RES.CH 1/20W 100K
R2007	4822 116 81058	M.RES.CH 1/20W 150K
R2009	4822 116 81058	M.RES.CH 1/20W 150K
R2010	4822 116 81047	M.RES.CH 1/20W 10K
R2007	4822 116 81058	M.RES.CH 1/20W 150K
R2009	4822 116 81058	M.RES.CH 1/20W 150K
R2010	4822 116 81047	M.RES.CH 1/20W 10K
R2011	4822 116 81102	M.RES.CH 1/20W 68K
R2012	4822 116 81082	M.RES.CH 1/20W 330K
R2013	4822 116 81058	M.RES.CH 1/20W 150K
R2014	4822 116 81092	M.RES.CH 1/20W 47K
R2015	4822 116 81063	M.RES.CH 1/20W 18K
R2016	4822 116 81112	M.RES.CH 1/20W 0
R2017	4822 116 81047	M.RES.CH 1/20W 10K
R2018	4822 116 81089	M.RES.CH 1/20W 470
R2019	4822 116 81049	M.RES.CH 1/20W 1M
R2020	4822 116 81068	M.RES.CH 1/20W 2.2K
R2021	4822 116 81112	M.RES.CH 1/20W 0
R2022	4822 116 81073	M.RES.CH 1/20W 270
R2024	4822 116 81056	M.RES.CH 1/20W 1.5K
R2025	4822 116 81101	M.RES.CH 1/20W 6.8K
R2026	4822 116 81081	M.RES.CH 1/20W 33K
R2027	4822 116 81097	M.RES.CH 1/20W 56K
R2028	4822 116 90445	M.RES.CH 1/10W 39K
R2029	4822 116 81049	M.RES.CH 1/20W 1M
R2030	4822 116 81047	M.RES.CH 1/20W 10K
R2031	4822 116 81075	M.RES.CH 1/20W 27K
R2032	4822 116 81081	M.RES.CH 1/20W 33K
R2033	4822 116 81074	M.RES.CH 1/20W 2.7K
R2034	4822 116 81112	M.RES.CH 1/20W 0
R2035	4822 116 81058	M.RES.CH 1/20W 150K
R2036	4822 116 81053	M.RES.CH 1/20W 12K
R2038	4822 116 81069	M.RES.CH 1/20W 22K
R2040	4822 116 81573	M.RES.CH 1/10W0
R2041	4822 116 81082	M.RES.CH 1/20W 330K
R2043	4822 116 81046	M.RES.CH 1/20W 1K
R2045-46	4822 116 81112	M.RES.CH 1/20W 0
R2048	4822 116 82353	M.RES.CH 1/10W220
R2050-51	4822 116 81081	M.RES.CH 1/20W 33K
R2052	4822 116 81085	M.RES.CH 1/20W 3.9K
R2053	4822 116 81101	M.RES.CH 1/20W 6.8K
R2054	4822 116 81096	M.RES.CH 1/20W 5.6K
R2056	4822 116 81067	M.RES.CH 1/20W 220
R2057	4822 116 81049	M.RES.CH 1/20W 1M
R2059	4822 116 81112	M.RES.CH 1/20W 0
R2063	4822 116 52234	C.RES.1/4W 100K
R3503	4822 116 81091	M.RES.CH 1/20W 4.7K
R3504	4822 116 81074	M.RES.CH 1/20W 2.7K
R3505	4822 116 81079	M.RES.CH 1/20W 3.3K
R3507-08	4822 116 81091	M.RES.CH 1/20W 4.7K
R3526	4822 116 81046	M.RES.CH 1/20W 1K
R3527	4822 116 81057	M.RES.CH 1/20W 15K
R3528	4822 116 81086	M.RES.CH 1/20W 39K
R3529	4822 116 81069	M.RES.CH 1/20W 22K
R3530-31	4822 116 81047	M.RES.CH 1/20W 10K
R4002	4822 116 81095	M.RES.CH 1/20W 560
R4004	4822 116 81061	M.RES.CH 1/20W 180
R4005	4822 116 81062	M.RES.CH 1/20W 1.8K
R4006	4822 116 81069	M.RES.CH 1/20W 22K
R4007	4822 116 81057	M.RES.CH 1/20W 15K
R4008	4822 116 81081	M.RES.CH 1/20W 33K
R4009	4822 116 81044	M.RES.CH 1/20W 10
R4010	4822 116 81055	M.RES.CH 1/20W 150
R4012	4822 116 81064	M.RES.CH 1/20W 180K
R4013	4822 116 81074	M.RES.CH 1/20W 2.7K
R4014	4822 116 81081	M.RES.CH 1/20W 33K
R4015	4822 116 81049	M.RES.CH 1/20W 1M
R4016	4822 116 81048	M.RES.CH 1/20W 100K
R4017	4822 116 81057	M.RES.CH 1/20W 15K
R4018	4822 116 81053	M.RES.CH 1/20W 12K
R4019	4822 116 81099	M.RES.CH 1/20W 680
R4020-21	4822 116 81045	M.RES.CH 1/20W 100
R4022	4822 116 81092	M.RES.CH 1/20W 47K
R4023	4822 116 81071	M.RES.CH 1/20W 220K
R4024-25	4822 116 81074	M.RES.CH 1/20W 2.7K
R4026	4822 116 81069	M.RES.CH 1/20W 22K
R4033	4822 116 81081	M.RES.CH 1/20W 33K
R4034	4822 116 81092	M.RES.CH 1/20W 47K
R4035	4822 116 82356	M.RES.CH 1/10W 33K
R4036	4822 116 81107	M.RES.CH 1/20W 820

-▭-

R4037	4822 116 81102	M.RES.CH 1/20W 68K
R4038	4822 116 81091	M.RES.CH 1/20W 4.7K
R4039	4822 116 81097	M.RES.CH 1/20W 56K
R4040	4822 116 81052	M.RES.CH 1/20W 1.2K
R4041	4822 116 81112	M.RES.CH 1/20W 0
R6001	4822 116 81092	M.RES.CH 1/20W 47K
R6004	4822 116 81078	M.RES.CH 1/20W 330
R6006	4822 116 81047	M.RES.CH 1/20W 10K
R6007	4822 116 82358	M.RES.CH 1/10W 68K
R6008-10	4822 116 81102	M.RES.CH 1/20W 68K
R6011-12	4822 116 81092	M.RES.CH 1/20W 47K
R6014	4822 116 81102	M.RES.CH 1/20W 68K
R6015	4822 116 82348	M.RES.CH 1/10W100K
R6016	4822 116 82358	M.RES.CH 1/10W 68K
R6017	4822 116 81078	M.RES.CH 1/20W 330
R6018	4822 116 81046	M.RES.CH 1/20W 1K
R6019	4822 116 81058	M.RES.CH 1/20W 150K
R6020	4822 116 81092	M.RES.CH 1/20W 47K
R6021	4822 116 81053	M.RES.CH 1/20W 12K
R6022	4822 111 91517	M.RES.CH 1/10W 10K
R6023	4822 116 81075	M.RES.CH 1/20W 27K
R6024	4822 116 81054	M.RES.CH 1/20W 120K
R6025	4822 116 81097	M.RES.CH 1/20W 56K
R6026	4822 116 82357	M.RES.CH 1/10W330K
R6027	4822 116 81571	M.RES.CH 1/10W 82K
R6028	4822 116 81054	M.RES.CH 1/20W 120K
R6029	4822 116 81092	M.RES.CH 1/20W 47K
R6030-31	4822 116 81069	M.RES.CH 1/20W 22K
R6032	4822 116 81092	M.RES.CH 1/20W 47K
R6033	4822 116 81071	M.RES.CH 1/20W 220K
R6034	4822 116 81057	M.RES.CH 1/20W 15K
R6036	4822 116 81064	M.RES.CH 1/20W 180K
R6039	4822 116 81102	M.RES.CH 1/20W 68K
R6040	4822 116 81046	M.RES.CH 1/20W 1K
R6043	4822 116 90457	M.RES.CH 1/10W 10
R6044	4822 116 81092	M.RES.CH 1/20W 47K
R6045	4822 116 81089	M.RES.CH 1/20W 470
R6047	4822 116 81092	M.RES.CH 1/20W 47K
R6048	4822 116 81087	M.RES.CH 1/20W 390K
R6049	4822 116 81069	M.RES.CH 1/20W 22K
R6050-51	4822 116 81045	M.RES.CH 1/20W 100
R6052-53	4822 116 81048	M.RES.CH 1/20W 100K
R6054	4822 116 81047	M.RES.CH 1/20W 10K
R6055-56	4822 116 81048	M.RES.CH 1/20W 100K
R6057-61	4822 116 81046	M.RES.CH 1/20W 1K
R6062	4822 116 81056	M.RES.CH 1/20W 1.5K
R6063	4822 116 81142	M.RES.CH 1/20W 8.2K
R6064	4822 111 91516	M.RES.CH 1/10W1K
R6065-66	4822 116 81046	M.RES.CH 1/20W 1K
R6067	4822 111 91516	M.RES.CH 1/10W1K
R6068	4822 116 81085	M.RES.CH 1/20W 3.9K
R6069	4822 116 81062	M.RES.CH 1/20W 1.8K
R6070	4822 116 81046	M.RES.CH 1/20W 1K
R6072-73	4822 116 81046	M.RES.CH 1/20W 1K
R6075	4822 116 81102	M.RES.CH 1/20W 68K
R6076	4822 116 81048	M.RES.CH 1/20W 100K
R6077	4822 116 81069	M.RES.CH 1/20W 22K
R6078	4822 116 81071	M.RES.CH 1/20W 220K
R6079	4822 116 81092	M.RES.CH 1/20W 47K
R6080	4822 116 81058	M.RES.CH 1/20W 150K
R6081	4822 116 81092	M.RES.CH 1/20W 47K
R6087	4822 111 91526	M.RES.CH 1/10W3.3K
R6088-89	4822 116 81102	M.RES.CH 1/20W 68K
R6090	4822 116 82358	M.RES.CH 1/10W 68K
R6091-92	4822 116 81102	M.RES.CH 1/20W 68K
R6093	4822 116 81092	M.RES.CH 1/20W 47K
R6097-98	4822 116 81046	M.RES.CH 1/20W 1K
R6099	4822 116 81566	M.RES.CH 1/10W 47K
R6100-01	4822 116 81047	M.RES.CH 1/20W 10K
R6102	4822 116 81046	M.RES.CH 1/20W 1K

SWITCH

SW6001-02	4822 276 12885	SWITCH

TRANSFORMER

T1001	4822 148 80859	TRANSFORMER
T4001	4822 146 21506	TRANSFORMER

-▭-

VR1001	4822 100 30093	V.RESISTOR 2K
VR1002	4822 100 30084	V.RESISTOR 5K
VR1003	4822 100 30095	V.RESISTOR 500
VR2001	4822 100 30092	V.RESISTOR 100K
VR4001	4822 100 30085	V.RESISTOR50K
VR4002	4822 100 30092	V.RESISTOR 100K
VR6001	4822 100 30082	V.RESISTOR20K

CRYSTAL

X2001	4822 242 72141	CRYSTAL OSCILLATOR
X6001	4822 242 73545	CRYSTAL OSCILLATOR
X6002	4822 242 72143	CRYSTAL OSCILLATOR

Miscellanous

	4822 320 50157	FLEXIBLE CARD

Miscellanous

	4822 466 70676	LUMI/CHRO PACK LO.HI

LUMIN./CHROMIN.C.B.A

C3001-02	4822 124 22742	E.CAP.6.3V 150U
C3003	4822 124 22754	E.CAP. 16V 4.7U
C3004	4822 124 11065	T.CAP. 35V 0.1U
C3005	4822 124 41007	E.CAP. 16V10U
C3006	4822 122 33768	C.CAP.CH 50V 33P
C3007	4822 122 33761	C.CAP.CH 50V 22P
C3008	4822 122 33752	C.CAP.CH 50V 15P
C3009-10	4822 124 41015	E.CAP.25V 4.7U
C3011	4822 122 33788	C.CAP.CH 50V82P
C3012	4822 122 33782	C.CAP.CH 50V56P
C3013	4822 122 33761	C.CAP.CH 50V22P
C3015	4822 124 22757	E.CAP. 50V 2.2U
C3016	4822 122 33788	C.CAP.CH 50V 82P
C3017	4822 124 41013	E.CAP. 25V2.2U
C3017	4822 124 41013	E.CAP. 25V2.2U
C3018	4822 126 10156	C.CAP.CH 50V0.027U
C3019	4822 124 41015	E.CAP.25V 4.7 U
C3020	4822 124 40997	E.CAP.6.3V 100U
C3021	4822 124 10787	T.CAP. 16V10U
C3022-23	4822 122 33748	C.CAP.CH 50V 0.01U
C3024	4822 122 33752	C.CAP.CH 50V15P
C3025	4822 122 33748	C.CAP.CH 50V0.01U
C3026	4822 122 33746	C.CAP.CH 50V 1000P
C3027	4822 124 41015	E.CAP. 25V 4.7U
C3030	4822 122 33748	C.CAP.CH 50V 0.01U
C3031	4822 124 41007	E.CAP. 16V 10U
C3032	4822 126 10691	C.CAP.CH 16V 0.1U
C3033	4822 124 41015	E.CAP. 25V 4.7U
C3034	4822 122 33748	C.CAP.CH 50V 0.01U
C3035	4822 124 22756	E.CAP. 50V1U
C3036	4822 124 41003	E.CAP. 6.3V 47U
C3037	4822 126 10691	C.CAP.CH 16V 0.1U
C3038	4822 122 33748	C.CAP.CH 50V 0.01U
C3039	4822 122 33749	C.CAP.CH 50V 0.1U
C3040	4822 124 41007	E.CAP. 16V 10U
C3041-43	4822 122 33748	C.CAP.CH 50V 0.01U
C3044	4822 124 23232	E.CAP. 4V 220U
C3045	4822 124 23249	E.CAP. 4V22U
C3046	4822 124 41007	E.CAP. 16V 10U
C3047	4822 126 10702	C.CAP. CH 50V 390P
C3048	4822 122 33761	C.CAP. CH 50V22P
C3049	4822 122 33788	C.CAP. CH 50V82P
C3050	4822 122 33775	C.CAP. CH 50V39P
C3051	4822 122 33782	C.CAP. CH 50V56P
C3053	4822 122 33748	C.CAP. CH 50V0.01U
C3054	4822 124 40997	E.CAP. 6.3V 100U
C3055	4822 122 33748	C.CAP.CH 50V 0.01U
C3056	4822 124 41003	E.CAP. 6.3V47U
C3057	4822 122 33748	C.CAP.CH 50V 0.01U
C3061	4822 122 33768	C.CAP.CH 50V 33P
C3065	4822 126 10144	C.CAP.CH 50V 12P
C3066	4822 126 10699	C.CAP.CH 50V 82P
C3067	4822 122 33769	C.CAP.CH 50V 330P
C3068	4822 122 33748	C.CAP.CH 50V 0.01U
C3070	4822 124 41007	E.CAP. 16V 10U
C3071	4822 124 23232	E.CAP.4V 220U
C3073	4822 122 33778	C.CAP.CH 50V 470P
C3075	4822 122 33754	C.CAP.CH 50V 150P
C3075	4822 122 33777	C.CAP.CH 50V47P
C3076	4822 122 33764	C.CAP.CH 50V27P
C8001	4822 124 41007	E.CAP. 16V 10U
C8002	4822 126 10152	C.CAP.CH 25V0.022U
C8003	4822 122 33766	C.CAP.CH 50V 270P
C8004	4822 122 33778	C.CAP.CH 50V 470P
C8005	4822 122 33749	C.CAP.CH 50V 0.1U
C8006-18	4822 122 33748	C.CAP.CH 50V 0.01U
C8019	4822 124 41015	E.CAP. 25V 4.7U
C8020	4822 124 41013	E.CAP. 25V 2.2U
C8021	4822 122 33748	C.CAP.CH 50V 0.01U
C8022	4822 124 41014	E.CAP. 25V 3.3 U
C8023-24	4822 122 33748	C.CAP.CH 50V 0.01U
C8025	4822 124 22739	E.CAP.6.3V100U
C8026	4822 126 10704	C.CAP.CH 50V 3P
C8027	4822 122 33746	C.CAP.CH 50V 1000P
C8028	4822 124 22742	E.CAP.6.3V 150U
C8029	4822 122 33748	C.CAP.CH 50V 0.01U
C8030	4822 122 33744	C.CAP.CH 50V 100P
C8031-35	4822 122 33748	C.CAP.CH 50V 0.01U
C8036	4822 122 33726	C.CAP.CH 16V 0.47U
C8037	4822 122 33785	C.CAP.CH 50V 68P
C8039	4822 124 23262	E.CAP. 50V 0.1U
C8043	4822 126 10691	C.CAP.CH 16V 0.1U
C8045	4822 122 33775	C.CAP.CH 50V 39P
C8047-48	4822 122 33748	C.CAP.CH 50V 0.01U
C8049	4822 124 40998	E.CAP.6.3V 22U
C8050	4822 126 10696	C.CAP.CH 50V 150P
C8053	4822 122 33749	C.CAP.CH 50V 0.1U

D3002	4822 130 80375	DIODE DAN202U
D3003	4822 130 80526	DIODE MA141K

Miscellanous

DL8001	4822 320 40228	DELAY LINE

FILTER

FL3001	4822 157 62167	FILTER
FL3002	4822 157 62171	FILTER
FL3003	4822 157 62164	FILTER
FL8001	4822 242 72125	FILTER
FL8002	4822 157 62166	FILTER
FL8003	4822 157 62169	FILTER
FL8008	4822 157 62165	FILTER
FL8009	4822 157 62168	FILTER

IC3001	4822 209 62186	VEFH08D HIC
IC3002	4822 209 61983	MST001MS IC
IC3003	4822 209 61967	AN3580SB IC
IC3004	4822 209 61991	TL8809F IC
IC8001	4822 209 61997	M52059AFP IC

L3001-02	4822 157 52162	COIL 100UH
L3003	4822 157 62177	COIL 18UH
L3004	4822 157 62174	COIL 120UH
L3005	4822 157 62173	COIL 100UH
L3007	4822 157 52162	COIL 100UH
L3008	4822 157 62173	COIL 100UH
L3009	4822 157 52162	COIL 100UH
L3010	4822 157 62179	COIL 33UH
L3011	4822 157 62176	COIL 150UH
L3012	4822 157 62175	COIL 15UH
L3013	4822 157 52162	COIL 100UH
L3015	4822 157 62181	COIL 47UH
L3016	4822 157 62178	COIL 180UH
L3017	4822 157 62172	COIL 10UH
L3020	4822 157 62181	COIL 47UH

L3010	4822 157 62179	COIL 33UH
L3011	4822 157 62176	COIL 150UH
L3012	4822 157 62175	COIL 15UH
L3013	4822 157 52162	COIL 100UH
L3015	4822 157 62181	COIL 47UH
L3016	4822 157 62178	COIL 180UH
L3017	4822 157 62172	COIL 10UH
L3020	4822 157 62181	COIL 47UH
L8002	4822 157 62173	COIL 100UH
L8003	4822 157 62182	COIL 330UH
L8012	4822 157 52162	COIL 100UH
L8013	4822 157 62175	COIL 15UH
L8015	4822 157 62174	COIL 120UH
L8016	4822 157 52162	COIL 100UH
L8017	4822 157 62173	COIL 100UH
L8018	4822 157 52162	COIL 100UH

P3001	4822 267 60264	CONN. (FEMALE)
P3002	4822 265 30802	CONN. (MALE)

Q3001	4822 130 61084	TRANS. 2SD1819
Q3002	4822 130 61081	TRANS. 2SC3931
Q3003	4822 130 61084	TRANS. 2SD1819
Q3005-06	4822 130 61084	TRANS. 2SD1819
Q3007	4822 130 61081	TRANS. 2SC3931
Q3008	4822 130 61084	TRANS. 2SD1819
Q3010	4822 130 61084	TRANS. 2SD1819
Q3012	4822 130 61081	TRANS. 2SC3931
Q3013-14	4822 130 61075	TRANS. 2SB1218
Q3015	4822 130 61081	TRANS. 2SC3931
Q3020-21	4822 130 61084	TRANS. 2SD1819

Digital transistor

QR3004	4822 130 60858	LOGIC TRANS. FMG1
QR8001	4822 130 60858	LOGIC TRANS. FMG1
QR8005	4822 130 61052	LOGIC TRANS. GA1F4M
QR8006	4822 209 83363	LOGIC TRANS. FMW1
QR8007	4822 130 60859	LOGIC TRANS. FMG2

R3001-02	4822 116 81095	M.RES.CH 1/20W 560
R3003-04	4822 116 81046	M.RES.CH 1/20W 1K
R3005	4822 116 81074	M.RES.CH 1/20W 2.7K
R3006	4822 116 81062	M.RES.CH 1/20W 1.8K
R3007	4822 116 81095	M.RES.CH 1/20W 560
R3008	4822 116 81046	M.RES.CH 1/20W 1K
R3010	4822 116 81046	M.RES.CH 1/20W 1K
R3011	4822 116 81107	M.RES.CH 1/20W 820
R3012	4822 116 81046	M.RES.CH 1/20W 1K
R3013-14	4822 116 81075	M.RES.CH 1/20W 27K
R3015	4822 116 81107	M.RES.CH 1/20W 820
R3016-17	4822 116 81047	M.RES.CH 1/20W 10K
R3018	4822 116 81142	M.RES.CH 1/20W 8.2K
R3019	4822 116 81046	M.RES.CH 1/20W 1K
R3021	4822 116 81056	M.RES.CH 1/20W 1.5K
R3022	4822 116 81112	M.RES.CH 1/20W 0
R3023-24	4822 116 81069	M.RES.CH 1/20W 22K
R3025	4822 116 81061	M.RES.CH 1/20W 180
R3026	4822 116 81045	M.RES.CH 1/20W 100
R3027	4822 116 81078	M.RES.CH 1/20W 330
R3028	4822 116 81101	M.RES.CH 1/20W 6.8K
R3029	4822 116 81053	M.RES.CH 1/20W 12K
R3030	4822 116 81084	M.RES.CH 1/20W 390
R3031	4822 116 81053	M.RES.CH 1/20W 12K
R3032	4822 116 81046	M.RES.CH 1/20W 1K
R3033	4822 116 81089	M.RES.CH 1/20W 470
R3034	4822 116 81046	M.RES.CH 1/20W 1K
R3035	4822 116 82345	M.RES.CH 1/20W 75
R3036-37	4822 116 81069	M.RES.CH 1/20W 22K
R3039	4822 116 81078	M.RES.CH 1/20W 330
R3040	4822 116 81089	M.RES.CH 1/20W 470
R3041	4822 116 81046	M.RES.CH 1/20W 1K
R3042	4822 111 91516	M.RES.CH 1/10W 1K
R3043	4822 116 81078	M.RES.CH 1/20W 330
R3044	4822 116 82344	M.RES.CH 1/20W 68
R3045-46	4822 116 81062	M.RES.CH 1/20W 1.8K
R3048	4822 116 81074	M.RES.CH 1/20W 2.7K
R3049-50	4822 116 81046	M.RES.CH 1/20W 1K
R3052	4822 116 81081	M.RES.CH 1/20W 33K
R3053	4822 116 81057	M.RES.CH 1/20W 15K
R3054	4822 116 81046	M.RES.CH 1/20W 1K
R3059	4822 116 81046	M.RES.CH 1/20W 1K
R3062	4822 116 81047	M.RES.CH 1/20W 10K
R3063	4822 116 81096	M.RES.CH 1/20W 5.6K
R3071	4822 116 81085	M.RES.CH 1/20W 3.9K
R3072	4822 116 81095	M.RES.CH 1/20W 560
R3073	4822 116 81045	M.RES.CH 1/20W 100
R3074	4822 116 81046	M.RES.CH 1/20W 1K
R3075	4822 116 81099	M.RES.CH 1/20W 680
R3076	4822 116 81084	M.RES.CH 1/20W 390
R3077	4822 116 81046	M.RES.CH 1/20W 1K
R3080	4822 116 81046	M.RES.CH 1/20W 1K
R3081	4822 116 81095	M.RES.CH 1/20W 560
R3082	4822 116 81052	M.RES.CH 1/20W 1.2K
R3083	4822 116 81074	M.RES.CH 1/20W 2.7K
R3085	4822 116 81052	M.RES.CH 1/20W 1.2K
R3086	4822 116 81046	M.RES.CH 1/20W 1K
R3087	4822 116 81048	M.RES.CH 1/20W 100K
R3088	4822 116 81046	M.RES.CH 1/20W 1K
R3089	4822 116 81112	M.RES.CH 1/20W 0
R3091	4822 116 81068	M.RES.CH 1/20W 2.2K
R3092	4822 116 81112	M.RES.CH 1/20W 0
R8001-03	4822 116 81046	M.RES.CH 1/20W 1K
R8004	4822 116 81047	M.RES.CH 1/20W 10K
R8005	4822 116 81046	M.RES.CH 1/20W 1K
R8006	4822 116 81047	M.RES.CH 1/20W 10K
R8007	4822 116 82354	M.RES.CH 1/10W2.2M
R8008	4822 116 81073	M.RES.CH 1/20W 270
R8009	4822 116 81052	M.RES.CH 1/20W 1.2K
R8010	4822 116 81107	M.RES.CH 1/20W 820
R8011	4822 116 81091	M.RES.CH 1/20W 4.7K
R8012	4822 116 81046	M.RES.CH 1/20W 1K
R8013	4822 116 81097	M.RES.CH 1/20W 56K
R8014	4822 116 81068	M.RES.CH 1/20W 2.2K
R8015	4822 116 81062	M.RES.CH 1/20W 1.8K
R8017	4822 116 81142	M.RES.CH 1/20W 8.2K
R8018	4822 116 81057	M.RES.CH 1/20W 15K
R8020	4822 116 81062	M.RES.CH 1/20W 1.8K
R8025-26	4822 116 81046	M.RES.CH 1/20W 1K
R8027	4822 116 82343	M.RES.CH 1/20W 43K
R8028	4822 116 81062	M.RES.CH 1/20W 1.8K
R8029	4822 116 81046	M.RES.CH 1/20W 1K
R8100	4822 116 81057	M.RES.CH 1/20W 15K
R8101	4822 116 81069	M.RES.CH 1/20W 22K
R8102	4822 116 81047	M.RES.CH 1/20W 10K
R8103	4822 116 81092	M.RES.CH 1/20W 47K
R8105	4822 116 81046	M.RES.CH 1/20W 1K
R8106	4822 116 81074	M.RES.CH 1/20W 2.7K
R8107-08	4822 116 81046	M.RES.CH 1/20W 1K
R8109	4822 116 81074	M.RES.CH 1/20W 2.7K

R8110	4822 116 81062	M.RES.CH 1/20W 1.8K
R8111	4822 116 81069	M.RES.CH 1/20W 22K
R8112	4822 116 81562	M.RES.CH 1/10W 22K
R8113	4822 116 81062	M.RES.CH 1/20W 1.8K
R8116	4822 116 81092	M.RES.CH 1/20W 47K
R8133	4822 116 81112	M.RES.CH 1/20W 0

VR3001-02	4822 100 30089	V.RESISTOR 2K
VR3003	4822 100 30095	V.RESISTOR 500
VR3004	4822 100 30085	V.RESISTOR 50K
VR3005	4822 100 30095	V.RESISTOR 500
VR8001	4822 100 30079	V.RESISTOR 1K
VR8007	4822 100 30082	V.RESISTOR 20K

CRYSTAL

X8001	4822 242 72359	CRYSTAL OSC.

DRIVE C.B.A.

C2602-04	4822 124 41015	E.CAP.25V 4.7U
C2605-06	4822 124 41003	E.CAP.6.3V 47U
C2607-09	4822 124 41015	E.CAP. 25V4.7U
C2610	4822 124 23257	E.CAP. 16V 47U
C2611	4822 124 22741	E.CAP.6.3V 10U
C2612	4822 124 40998	E.CAP.6.3V 22U
C2613-15	4822 122 33748	C.CAP.CH 50V0.01U
C2616	4822 122 33746	C.CAP.CH 50V1000P
C2617-19	4822 126 10691	C.CAP.CH 16V 0.1U
C2620-22	4822 126 10703	C.CAP.CH 16V0.033U
C2623	4822 126 10705	C.CAP.CH 50V 220P
C2624-25	4822 126 10691	C.CAP.CH 16V 0.1U
C2626	4822 122 33748	C.CAP.CH 50V0.01U
C2627	4822 126 10691	C.CAP.CH 16V 0.1U
C2628	4822 122 33748	C.CAP.CH 50V0.01U
C2629	4822 126 10691	C.CAP.CH 16V 0.1U
C2630	4822 122 33748	C.CAP.CH 50V0.01U
C2631	4822 124 41003	E.CAP.6.3V 47U
C2632	4822 124 23257	E.CAP.16 V 47U

D2601	4822 130 32635	MA151K DIODE

IC2601	4822 209 61972	BA6456FS IC
IC2602	4822 209 61969	AN3819FBS IC
IC2603	4822 209 61988	TDM3700 IC
IC2604-05	4822 209 73817	ON2170LF IC

P2601	4822 265 51285	VJP2794 CONN. (MALE)
P2602	4822 267 50985	VJS2582B015 CONN. (FEMALE)
P2603	4822 267 50934	VJS2325 CONN. (FEMALE)
P2604-05	4822 265 20433	VJP2271 CONN. (MALE)
P2606	4822 265 20432	VJP2260 CONN. (MALE)

Q2601	4822 130 61084	2SD1819 TRANS.

R2601	4822 116 81078	M.RES.CH 1/20W 330
R2602	4822 116 81048	M.RES.CH 1/20W 100K
R2603	4822 116 81053	M.RES.CH 1/20W 12K
R2604	4822 116 81081	M.RES.CH 1/20W 33K
R2605	4822 116 82342	M.RES.CH 1/2W 0.68
R2606-08	4822 116 82361	M.RES.CH 1/8W 4.7
R2609	4822 116 81067	M.RES.CH 1/20W 220
R2610	4822 116 81045	M.RES.CH 1/20W 100
R2611	4822 116 81046	M.RES.CH 1/20W 1K
R2612	4822 116 81089	M.RES.CH 1/20W 470
R2613	4822 116 81051	M.RES.CH 1/20W 120
R2614	4822 116 81076	M.RES.CH 1/20W 270K
R2615	4822 116 81048	M.RES.CH 1/20W 100K
R2616	4822 116 82359	M.RES.CH 1/8W 0.33
R2617	4822 116 81085	M.RES.CH 1/20W 3.9K
R2618	4822 116 81048	M.RES.CH 1/20W 100K
R2619-20	4822 116 81047	M.RES.CH 1/20W 10K
R2621	4822 116 81078	M.RES.CH 1/20W 330
R2630	5322 111 90091	M.RES.CH 1/8W 100

Miscellanous

	4822 403 53997	REEL SENSOR HOLDER(S)

HEAD AMP C.B.A.

C5001	4822 122 33748	C.CAP.CH 50V0.01U
C5002	4822 126 10694	C.CAP.CH 50V0.01U
C5003	4822 122 33748	C.CAP.CH 50V0.01U
C5004	4822 126 10694	C.CAP.CH 50V0.01U
C5005	4822 122 33731	C.CAP.CH 25V 0.1U
C5006	4822 124 23257	E.CAP.16V 47U
C5007	4822 122 33748	C.CAP.CH 50V0.01U
C5008	4822 124 41003	E.CAP. 6.3V 47U
C5009	4822 122 33748	C.CAP.CH 50V 0.01U
C5010	4822 122 33731	C.CAP.CH 25V 0.1U
C5011	4822 122 33748	C.CAP.CH 50V 0.01U
C5013	4822 126 10687	C.CAP.CH 16V1U
C5014	4822 122 33748	C.CAP.CH 50V 0.01U
C5015	4822 122 33785	C.CAP.CH 50V68P
C5016-17	4822 122 33748	C.CAP.CH 50V 0.01U
C5018	4822 122 33785	C.CAP.CH 50V 68P
C5019	4822 122 33748	C.CAP.CH 50V 0.01U
C5020	4822 126 10687	C.CAP.CH 16V 1U
C5022-23	4822 126 10687	C.CAP.CH 16V 1U
C5025	4822 122 33748	C.CAP.CH 50V 0.01U
C5026-27	4822 122 33785	C.CAP.CH 50V 68P
C5028-30	4822 122 33748	C.CAP.CH 50V 0.01U
C5031	4822 126 10687	C.CAP.CH 16V 1U
C5033	4822 124 41003	E.CAP. 6.3V 47U
C5034	4822 122 33748	C.CAP.CH 50V 0.01U
C5035-36	4822 126 10688	C.CAP.CH 25V 0.01U
C5037	4822 126 10691	C.CAP.CH 16V0.1U
C5038	4822 122 33754	C.CAP.CH 50V150P
C5039	4822 122 33751	C.CAP.CH 50V120P
C5040	4822 122 33775	C.CAP.CH 50V 39P
C5041-44	4822 122 33779	C.CAP.CH 50V 4700P

IC5001	4822 209 61966	AN3346FBP IC

L5001-03	4822 157 62152	COIL 100 UH
L5004	4822 157 53666	COIL 10 UH
L5005	4822 157 62144	COIL 12 UH

P5001	4822 265 51244	CONN. (MALE)
P5002	4822 267 50931	CONN. (FEMALE)
P5003	4822 265 20432	CONN. (MALE)

Q5001	4822 130 61075	TRANS. 2SB1218
Q5002	4822 130 61074	TRANS. 2SA812
Q5003	4822 130 41956	TRANS. 2SA1175
Q5004-05	4822 130 62225	TRANS. XN4504

Digital transistor

QR5001	4822 130 61061	LOGIC TRANS. UN5215
QR5002-03	4822 130 60858	LOGIC TRANS: FMG1

R5001	4822 116 81056	M.RES.CH 1/20W 1.5K
R5002	4822 116 81047	M.RES.CH 1/20W 10K
R5003-05	4822 116 81046	M.RES.CH 1/20W 1K
R5006	4822 116 81089	M.RES.CH 1/20W 470
R5007	4822 116 81099	M.RES.CH 1/20W 680
R5009	4822 116 81047	M.RES.CH 1/20W 10K
R5010	4822 116 81068	M.RES.CH 1/20W 2.2K
R5011-12	4822 116 81044	M.RES.CH 1/20W 10
R5013-14	4822 116 81068	M.RES.CH 1/20W 2.2K
R5015-16	4822 116 81044	M.RES.CH 1/20W 10
R5017-18	4822 116 81099	M.RES.CH 1/20W 680
R5019	4822 116 81068	M.RES.CH 1/20W 2.2K
R5020	4822 116 81047	M.RES.CH 1/20W 10K
R5021-24	4822 116 81081	M.RES.CH 1/20W 33K
R5025	4822 116 81086	M.RES.CH 1/20W 39K
R5026	4822 116 81142	M.RES.CH 1/20W 8.2K
R5027	4822 116 81073	M.RES.CH 1/20W 270
R5028	4822 116 81084	M.RES.CH 1/20W 390
R5031-34	4822 116 81091	M.RES.CH 1/20W 4.7K
R5035-38	4822 116 81047	M.RES.CH 1/20W 10K
R5040	5322 111 90376	M.RES.CH 1/8W 4.7
R5041-42	4822 116 81099	M.RES.CH 1/20W 680
R5043	4822 116 81103	M.RES.CH 1/20W 680K
R5044	4822 116 81068	M.RES.CH 1/20W 2.2K

VTR OPERATION C.B.A

—▶|—

D6302-04	4822 130 32362	MA165 DIODE
D6305	4822 130 82023	BR2202S-20 DIODE
D6306	4822 130 82022	AY2222S DIODE

—●—)—

P6301	4822 267 50983	CONN. (FEMALE)
P6302	4822 265 41022	CONN. (MALE)

Digital transistor

QR6301	4822 111 91318	LOGIC TRANS. UN1113

—▭—

R6301	4822 116 52219	C.RES. 1/4W 330
R6304	4822 116 52233	C.RES. 1/4W 10K
R6305	4822 116 52249	C.RES. 1/4W 1.8K
R6306	4822 116 52256	C.RES. 1/4W 2.2K
R6307	4822 116 52263	C.RES. 1/4W 2.7K
R6308	4822 116 52283	C.RES. 1/4W 4.7K
R6309	4822 116 52219	C.RES. 1/4W 330

SWITCH

SW6302-05	4822 271 30697	SWITCH
SW6308-11	4822 271 30697	SWITCH
SW6312	4822 277 21276	POWER SWITCH
SW6313	4822 271 30696	CAMERA/VTR SWITCH

Miscellanous

	4822 214 32914	START/STOP SW C.B.A

—▶|—

D1501	4822 130 82023	BR2202S-20 DIODE

SWITCH

SW1501	4822 276 12403	SWITCH

Miscellanous

	4822 214 32915	EARPHONE JACK C.B.A

—||—

C4301	4822 124 23253	CAPACITOR

—▭—

R4301	4822 116 82341	RESISTOR